

## The Exchange Fund

---

- ◆ Report of the Director of Audit
- ◆ Exchange Fund Financial Statements

# Report of the Director of Audit

---



## **Audit Commission**

**The Government of the Hong Kong Special Administrative Region**

### **Independent Auditor's Report To the Financial Secretary**

#### *Opinion*

I certify that I have audited the financial statements of the Exchange Fund and its subsidiaries ("the Group") set out on pages 149 to 237, which comprise the balance sheets of the Exchange Fund and of the Group as at 31 December 2016, and their income and expenditure accounts, statements of comprehensive income, statements of changes in equity and statements of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In my opinion, the financial statements give a true and fair view of the financial position of the Fund and of the Group as at 31 December 2016, and of their financial performance and cash flows for the year then ended in accordance with Hong Kong Financial Reporting Standards ("HKFRSs") issued by the Hong Kong Institute of Certified Public Accountants ("HKICPA") and have been properly prepared in accordance with the directive of the Chief Executive made under section 7 of the Exchange Fund Ordinance (Cap. 66).

#### *Basis for opinion*

I conducted my audit in accordance with the directive of the Chief Executive made under section 7 of the Exchange Fund Ordinance and the Audit Commission auditing standards. My responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the financial statements* section of my report. I am independent of the Group in accordance with those standards, and I have fulfilled my other ethical responsibilities in accordance with those standards. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

#### *Key audit matters*

Key audit matters are those matters that, in my professional judgment, were of most significance in my audit of the financial statements for the year ended 31 December 2016. These matters were addressed in the context of my audit of the financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

## Report of the Director of Audit (continued)

Key audit matter	How the matter was addressed in my audit
<b>Valuation of financial assets and financial liabilities at fair value</b>	
<i>Refer to notes 2.5, 2.6 and 36.1 to the financial statements.</i>	
<p>As at 31 December 2016, the Group had financial assets totalling HK\$3,198,975 million and financial liabilities totalling HK\$963,977 million valued at fair value.</p>	<p>The audit procedures on valuation of financial assets and financial liabilities at fair value included:</p>
<p>For 95% of these financial assets and all these financial liabilities, their fair values were quoted prices in active markets for identical assets or liabilities (Level 1 inputs) or were estimated using valuation techniques with inputs based on observable market data (Level 2 inputs).</p>	<ul style="list-style-type: none"> <li>– obtaining an understanding of the procedures, including relevant controls, for valuing different categories of financial assets and financial liabilities;</li> </ul>
<p>For the remaining 5% of these financial assets, their fair values were estimated using valuation techniques with inputs not based on observable market data (Level 3 inputs). Such financial assets totalled HK\$175,886 million, including mainly unlisted investment funds.</p>	<ul style="list-style-type: none"> <li>– evaluating and testing the controls, including relevant application controls of the computer systems;</li> </ul>
<p>Given the substantial amount and the estimations involved, valuation of financial assets and financial liabilities at fair value was a key audit matter.</p>	<ul style="list-style-type: none"> <li>– obtaining external confirmations on the valuation, existence, rights and obligations and completeness of the financial assets and financial liabilities;</li> </ul>
	<ul style="list-style-type: none"> <li>– where quoted market prices were used, verifying the prices to independent sources;</li> </ul>
	<ul style="list-style-type: none"> <li>– where valuation techniques with inputs based on observable market data were used, evaluating the appropriateness of the valuation methodologies and the reasonableness of the assumptions, and verifying the inputs to independent sources; and</li> </ul>
	<ul style="list-style-type: none"> <li>– where valuation techniques with inputs not based on observable market data were used, evaluating the appropriateness of the valuation methodologies and the reasonableness of the assumptions and inputs.</li> </ul>

## Report of the Director of Audit (continued)

Key audit matter	How the matter was addressed in my audit
<b>Placements by the Future Fund</b> <i>Refer to notes 2.6, 2.16.1, 4(b), 23 and 28 to the financial statements.</i>	
<p>In prior years, substantially all placements by Fiscal Reserves were repayable on demand, with interest payable at a fixed rate determined annually with reference to past investment returns of the Investment Portfolio.</p> <p>On 1 January 2016, the Government established the Future Fund within Fiscal Reserves. Placements by the Future Fund comprise an initial endowment from the balance of the Land Fund, amounting to HK\$219,730 million, and periodic top-ups from the General Revenue Account as directed by the Financial Secretary. Interest on placements by the Future Fund is payable at a composite rate, computed annually on a weighted average basis with reference to the fixed rate linked with the performance of the Investment Portfolio mentioned above and the annual rate of return linked with the performance of the Long-Term Growth Portfolio, which holds private equity and real estate investments. Placements by the Future Fund, together with the interest thereon, shall only be repaid on 31 December 2025 unless otherwise directed by the Financial Secretary.</p> <p>As at 31 December 2016, placements by the Future Fund totalled HK\$224,530 million. Accrued interest on the placements amounted to HK\$10,071 million. Given the substantial amount involved and the significant changes in the terms of placements, the measurement, presentation and disclosures of the placements and the interest thereon required additional attention.</p>	<p>The audit procedures on placements by the Future Fund included:</p> <ul style="list-style-type: none"> <li>– evaluating the appropriateness of the accounting policy used for measuring the placements and the accrued interest;</li> <li>– reviewing the methodology for calculating the annual rate of return linked with the performance of the Long-Term Growth Portfolio;</li> <li>– verifying the computation of the fixed rate with reference to past investment returns of the Investment Portfolio, the annual rate of return linked with the performance of the Long-Term Growth Portfolio, and the composite rate with reference to these two rates;</li> <li>– verifying the amount of interest accrued using the composite rate; and</li> <li>– reviewing the presentation and disclosures of the placements and the accrued interest in the financial statements.</li> </ul>
Key audit matter	How the matter was addressed in my audit

### **Valuation of investment properties at fair value**

*Refer to notes 2.12, 17 and 18 to the financial statements.*

The Group's investment properties were stated at their fair values, totalling HK\$22,723 million as at 31 December 2016. The Group also had interests in three associates and fourteen joint ventures totalling HK\$32,083 million, whose principal activities were holding overseas investment properties. The fair values of these investment properties, whether held by the Group directly or by associates or joint ventures, were mainly determined based on valuations by independent professional valuers. Such valuations involved significant judgments and estimates, including the valuation methodologies and the assumptions used.

The audit procedures on valuation of investment properties at fair value included:

- obtaining and reviewing the valuation reports of investment properties held by the Group directly or by associates or joint ventures, and verifying that the fair values were based on the valuations stated in the valuation reports;
- assessing the independence and qualifications of the valuers; and
- evaluating the appropriateness of the valuation methodologies and the reasonableness of the assumptions and inputs.

## Report of the Director of Audit (continued)

---

### *Other information*

The Monetary Authority is responsible for the other information. The other information comprises all the information included in the 2016 Annual Report of the Hong Kong Monetary Authority, other than the financial statements and my auditor's report thereon.

My opinion on the financial statements does not cover the other information and I do not express any form of assurance conclusion thereon.

In connection with my audit of the financial statements, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or my knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work I have performed, I conclude that there is a material misstatement of this other information, I am required to report that fact. I have nothing to report in this regard.

### *Responsibilities of the Monetary Authority and the Audit Sub-Committee of the Exchange Fund Advisory Committee for the financial statements*

The Monetary Authority is responsible for the preparation of the financial statements that give a true and fair view in accordance with HKFRSs issued by the HKICPA and the directive of the Chief Executive made under section 7 of the Exchange Fund Ordinance, and for such internal control as the Monetary Authority determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Monetary Authority is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting.

The Audit Sub-Committee of the Exchange Fund Advisory Committee is responsible for overseeing the Group's financial reporting process.

### *Auditor's responsibilities for the audit of the financial statements*

My objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Audit Commission auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with the Audit Commission auditing standards, I exercise professional judgment and maintain professional skepticism throughout the audit. I also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Monetary Authority;

## Report of the Director of Audit (continued)

---

- conclude on the appropriateness of the Monetary Authority's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern;
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation; and
- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with the Audit Sub-Committee of the Exchange Fund Advisory Committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide the Audit Sub-Committee of the Exchange Fund Advisory Committee with a statement that I have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence, and where applicable, related safeguards.

From the matters communicated with the Audit Sub-Committee of the Exchange Fund Advisory Committee, I determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. I describe these matters in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

**David Sun**  
Director of Audit

7 April 2017

Audit Commission  
26th Floor  
Immigration Tower  
7 Gloucester Road  
Wanchai, Hong Kong

# Contents

---

	Page
<b>INCOME AND EXPENDITURE ACCOUNT</b>	149
<b>STATEMENT OF COMPREHENSIVE INCOME</b>	150
<b>BALANCE SHEET</b>	151
<b>STATEMENT OF CHANGES IN EQUITY</b>	152
<b>STATEMENT OF CASH FLOWS</b>	153
<b>NOTES TO THE FINANCIAL STATEMENTS:</b>	155
1 PRINCIPAL ACTIVITIES	155
2 SIGNIFICANT ACCOUNTING POLICIES	155
3 CHANGES IN ACCOUNTING POLICIES	171
4 INCOME AND EXPENDITURE	172
5 INCOME TAX	176
6 CATEGORIES OF FINANCIAL ASSETS AND FINANCIAL LIABILITIES	178
7 CASH AND MONEY AT CALL	182
8 PLACEMENTS WITH BANKS AND OTHER FINANCIAL INSTITUTIONS	182
9 FINANCIAL ASSETS DESIGNATED AT FAIR VALUE	183
10 AVAILABLE-FOR-SALE SECURITIES	184
11 DERIVATIVE FINANCIAL INSTRUMENTS	184
12 HELD-TO-MATURITY SECURITIES	187
13 LOAN PORTFOLIO	188
14 GOLD	188
15 OTHER ASSETS	188
16 INTERESTS IN SUBSIDIARIES	189
17 INTERESTS IN ASSOCIATES AND JOINT VENTURES	190
18 INVESTMENT PROPERTIES	191
19 PROPERTY, PLANT AND EQUIPMENT	194
20 CERTIFICATES OF INDEBTEDNESS, GOVERNMENT-ISSUED CURRENCY NOTES AND COINS IN CIRCULATION	196
21 BALANCE OF THE BANKING SYSTEM	196
22 PLACEMENTS BY BANKS AND OTHER FINANCIAL INSTITUTIONS	197
23 PLACEMENTS BY FISCAL RESERVES	197
24 PLACEMENTS BY HONG KONG SPECIAL ADMINISTRATIVE REGION GOVERNMENT FUNDS AND STATUTORY BODIES	198
25 EXCHANGE FUND BILLS AND NOTES ISSUED	199
26 BANK LOANS	200
27 OTHER DEBT SECURITIES ISSUED	200
28 OTHER LIABILITIES	201
29 ANALYSIS OF CASH AND CASH EQUIVALENTS IN THE STATEMENT OF CASH FLOWS	202
30 OPERATING SEGMENT INFORMATION	203

## Contents (continued)

---

31	PLEDGED ASSETS	206
32	COMMITMENTS	207
33	CONTINGENT LIABILITIES	209
34	MATERIAL RELATED PARTY TRANSACTIONS	209
35	FINANCIAL RISK MANAGEMENT	210
36	FAIR VALUE MEASUREMENT OF FINANCIAL INSTRUMENTS	230
37	POSSIBLE IMPACT OF AMENDMENTS, NEW STANDARDS AND INTERPRETATIONS ISSUED BUT NOT YET EFFECTIVE FOR THE YEAR ENDED 31 DECEMBER 2016	236
38	APPROVAL OF FINANCIAL STATEMENTS	237



# Exchange Fund – Income and Expenditure Account

for the year ended 31 December 2016

		Group		Fund	
(Expressed in millions of Hong Kong dollars)	Note	2016	2015	2016	2015
INCOME					
Interest income		25,361	18,001	24,341	16,875
Dividend income		13,743	14,275	12,797	13,403
Income from investment properties		463	2,685	–	–
Net realised and unrealised gains/(losses)		37,755	(200)	29,226	(9,902)
Net exchange loss		(14,521)	(43,870)	(15,828)	(44,937)
Investment income/(loss)	4(a)	62,801	(9,109)	50,536	(24,561)
Bank licence fees		130	131	130	131
Other income		807	603	67	82
TOTAL INCOME		63,738	(8,375)	50,733	(24,348)
EXPENDITURE					
Interest expense on placements by Fiscal Reserves, HKSAR Government funds and statutory bodies	4(b)	(42,686)	(61,389)	(42,686)	(61,389)
Other interest expense	4(c)	(2,976)	(1,488)	(2,258)	(815)
Operating expenses	4(d)	(4,467)	(4,393)	(3,674)	(3,581)
Note and coin expenses	4(e)	(457)	(464)	(457)	(464)
TOTAL EXPENDITURE		(50,586)	(67,734)	(49,075)	(66,249)
SURPLUS/(DEFICIT) BEFORE SHARE OF PROFIT OF ASSOCIATES AND JOINT VENTURES					
		13,152	(76,109)	1,658	(90,597)
Share of profit of associates and joint ventures, net of tax		3,009	1,977	–	–
SURPLUS/(DEFICIT) BEFORE TAXATION					
		16,161	(74,132)	1,658	(90,597)
Income tax	5	(57)	(123)	–	–
SURPLUS/(DEFICIT) FOR THE YEAR					
		16,104	(74,255)	1,658	(90,597)
ATTRIBUTABLE TO:					
Owner of the Fund		15,958	(74,473)	1,658	(90,597)
Non-controlling interests		146	218	–	–
		16,104	(74,255)	1,658	(90,597)

The notes on pages 155 to 237 form part of these financial statements.

## Exchange Fund – Statement of Comprehensive Income

for the year ended 31 December 2016

(Expressed in millions of Hong Kong dollars)	Group		Fund	
	2016	2015	2016	2015
<b>SURPLUS/(DEFICIT) FOR THE YEAR</b>	<b>16,104</b>	<b>(74,255)</b>	<b>1,658</b>	<b>(90,597)</b>
<b>OTHER COMPREHENSIVE INCOME/(LOSS)</b>				
<b>Items that may be reclassified subsequently to income and expenditure account</b>				
Available-for-sale securities				
fair value changes on revaluation	4,356	(3,923)	–	–
fair value changes on disposal transferred to income and expenditure account	(130)	(157)	–	–
tax effect	20	40	–	–
Cash flow hedges				
fair value changes transferred to income and expenditure account	–	3	–	–
tax effect	–	(1)	–	–
Exchange difference on translation of financial statements of overseas subsidiaries, associates and joint ventures	(1,937)	(935)	–	–
<b>OTHER COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR, NET OF TAX</b>	<b>2,309</b>	<b>(4,973)</b>	<b>–</b>	<b>–</b>
<b>TOTAL COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR</b>	<b>18,413</b>	<b>(79,228)</b>	<b>1,658</b>	<b>(90,597)</b>
<b>TOTAL COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR ATTRIBUTABLE TO:</b>				
Owner of the Fund	18,304	(79,434)	1,658	(90,597)
Non-controlling interests	109	206	–	–
	<b>18,413</b>	<b>(79,228)</b>	<b>1,658</b>	<b>(90,597)</b>

The notes on pages 155 to 237 form part of these financial statements.

# Exchange Fund – Balance Sheet

as at 31 December 2016

(Expressed in millions of Hong Kong dollars)	Note	Group		Fund	
		2016	2015	2016	2015
<b>ASSETS</b>					
Cash and money at call	7	207,587	188,547	206,954	187,835
Placements with banks and other financial institutions	8	203,704	123,880	179,712	102,681
Financial assets designated at fair value	9	3,057,356	3,015,402	3,042,754	3,002,620
Available-for-sale securities	10	132,849	104,475	493	493
Derivative financial instruments	11(a)	9,263	5,831	9,018	5,357
Held-to-maturity securities	12	9,932	10,274	–	–
Loan portfolio	13	9,534	11,502	–	–
Gold	14	600	550	600	550
Other assets	15	56,673	22,847	55,117	21,994
Interests in subsidiaries	16	–	–	121,114	98,331
Interests in associates and joint ventures	17	32,083	21,188	–	–
Investment properties	18	22,723	23,621	–	–
Property, plant and equipment	19(a)	3,191	3,192	2,944	3,009
<b>TOTAL ASSETS</b>		<b>3,745,495</b>	<b>3,531,309</b>	<b>3,618,706</b>	<b>3,422,870</b>
<b>LIABILITIES AND EQUITY</b>					
Certificates of Indebtedness	20	405,345	357,863	405,345	357,863
Government-issued currency notes and coins in circulation	20	11,928	11,335	11,928	11,335
Balance of the banking system	21	259,593	391,343	259,593	391,343
Placements by banks and other financial institutions	22	56,136	66,907	56,136	66,907
Placements by Fiscal Reserves	23	914,598	833,548	914,598	833,548
Placements by Hong Kong Special Administrative Region Government funds and statutory bodies	24	302,485	280,846	302,485	280,846
Exchange Fund Bills and Notes issued	25	960,982	827,792	960,982	827,792
Derivative financial instruments	11(a)	2,858	3,256	929	1,102
Bank loans	26	11,724	11,318	–	–
Other debt securities issued	27	34,233	33,463	–	–
Other liabilities	28	167,522	114,283	160,197	107,279
<b>Total liabilities</b>		<b>3,127,404</b>	<b>2,931,954</b>	<b>3,072,193</b>	<b>2,878,015</b>
Accumulated surplus		607,480	591,522	546,513	544,855
Revaluation reserve		12,748	8,501	–	–
Translation reserve		(3,654)	(1,753)	–	–
Total equity attributable to owner of the Fund		616,574	598,270	546,513	544,855
Non-controlling interests		1,517	1,085	–	–
<b>Total equity</b>		<b>618,091</b>	<b>599,355</b>	<b>546,513</b>	<b>544,855</b>
<b>TOTAL LIABILITIES AND EQUITY</b>		<b>3,745,495</b>	<b>3,531,309</b>	<b>3,618,706</b>	<b>3,422,870</b>

**Norman T. L. Chan**

Monetary Authority

7 April 2017

The notes on pages 155 to 237 form part of these financial statements.

## Exchange Fund – Statement of Changes in Equity

for the year ended 31 December 2016

(Expressed in millions of Hong Kong dollars)	Attributable to owner of the Fund			Total attributable to owner of the Fund	Non-controlling interests	Total
	Accumulated surplus	Revaluation reserve	Translation reserve			
<b>Group</b>						
At 1 January 2015	665,995	12,539	(830)	677,704	878	678,582
Deficit for the year	(74,473)	–	–	(74,473)	218	(74,255)
Other comprehensive loss for the year						
Fair value changes on available-for-sale securities:						
– revaluation	–	(3,923)	–	(3,923)	–	(3,923)
– realisation on disposal	–	(157)	–	(157)	–	(157)
– tax effect	–	40	–	40	–	40
Fair value changes on cash flow hedges:						
– transferred to income and expenditure account	–	3	–	3	–	3
– tax effect	–	(1)	–	(1)	–	(1)
Exchange difference on translation of financial statements of overseas subsidiaries, associates and joint ventures	–	–	(923)	(923)	(12)	(935)
Total comprehensive loss for the year	(74,473)	(4,038)	(923)	(79,434)	206	(79,228)
Capital injection by non-controlling interests	–	–	–	–	14	14
Dividends paid to non-controlling interests	–	–	–	–	(13)	(13)
At 31 December 2015	591,522	8,501	(1,753)	598,270	1,085	599,355
At 1 January 2016	591,522	8,501	(1,753)	598,270	1,085	599,355
Surplus for the year	15,958	–	–	15,958	146	16,104
Other comprehensive income for the year						
Fair value changes on available-for-sale securities:						
– revaluation	–	4,357	–	4,357	(1)	4,356
– realisation on disposal	–	(130)	–	(130)	–	(130)
– tax effect	–	20	–	20	–	20
Exchange difference on translation of financial statements of overseas subsidiaries, associates and joint ventures	–	–	(1,901)	(1,901)	(36)	(1,937)
Total comprehensive income for the year	15,958	4,247	(1,901)	18,304	109	18,413
Capital injection by non-controlling interests	–	–	–	–	333	333
Dividends paid to non-controlling interests	–	–	–	–	(10)	(10)
At 31 December 2016	607,480	12,748	(3,654)	616,574	1,517	618,091
<b>Fund</b>						
At 1 January 2015	635,452	–	–	635,452	–	635,452
Deficit and total comprehensive loss for the year	(90,597)	–	–	(90,597)	–	(90,597)
At 31 December 2015	544,855	–	–	544,855	–	544,855
At 1 January 2016	544,855	–	–	544,855	–	544,855
Surplus and total comprehensive income for the year	1,658	–	–	1,658	–	1,658
At 31 December 2016	546,513	–	–	546,513	–	546,513

The notes on pages 155 to 237 form part of these financial statements.

# Exchange Fund – Statement of Cash Flows

for the year ended 31 December 2016

(Expressed in millions of Hong Kong dollars)	Note	Group		Fund	
		2016	2015	2016	2015
<b>Cash flows from operating activities</b>					
Surplus/(Deficit) before taxation		16,161	(74,132)	1,658	(90,597)
<b>Adjustments for:</b>					
Interest income	4(a)	(25,361)	(18,001)	(24,341)	(16,875)
Dividend income	4(a)	(13,743)	(14,275)	(12,797)	(13,403)
Change in fair value of investment properties	4(a)	805	(1,703)	–	–
Net gains on disposal of available-for-sale securities	4(a)	(6,954)	(10,554)	–	–
Interest expense	4(b) & 4(c)	45,662	62,877	44,944	62,204
Depreciation	4(d)	204	198	156	151
Share of profit of associates and joint ventures		(3,009)	(1,977)	–	–
Net loss on disposal of property, plant and equipment		–	5	–	–
Elimination of exchange differences and other non-cash items		9,227	8,154	8,683	8,052
Interest received		25,090	17,489	24,108	16,371
Interest paid		(33,101)	(16,143)	(32,455)	(15,549)
Dividends received		13,676	14,248	11,929	12,891
Income tax paid		(74)	(74)	–	–
		28,583	(33,888)	21,885	(36,755)
Change in fair value of derivatives and other debt securities issued		(3,893)	(1,022)	(3,823)	(975)
Change in carrying amount of:					
– placements with banks and other financial institutions		(3,811)	(4,633)	712	(1,580)
– financial assets designated at fair value		(49,813)	(205,192)	(47,993)	(204,252)
– loan portfolio		1,969	4,070	–	–
– gold		(50)	71	(50)	71
– other assets		(33,501)	(3,603)	(32,818)	(3,449)
– Certificates of Indebtedness, government-issued currency notes and coins in circulation		48,075	17,986	48,075	17,986
– balance of the banking system		(131,750)	152,160	(131,750)	152,160
– placements by banks and other financial institutions		(10,771)	2,906	(10,771)	2,906
– placements by Fiscal Reserves		81,050	44,867	81,050	44,867
– placements by Hong Kong Special Administrative Region Government funds and statutory bodies		21,639	19,707	21,639	19,707
– Exchange Fund Bills and Notes issued		133,190	75,846	133,190	75,346
– other liabilities		40,739	7,393	40,413	7,337
<b>Net cash from operating activities</b>		121,656	76,668	119,759	73,369

## Exchange Fund – Statement of Cash Flows (continued)

for the year ended 31 December 2016

		Group		Fund	
(Expressed in millions of Hong Kong dollars)	Note	2016	2015	2016	2015
<b>Cash flows from investing activities</b>					
Loans to subsidiaries		–	–	(22,783)	(13,409)
Increase in interests in associates and joint ventures		(8,235)	(3,019)	–	–
Proceeds from sale or redemption of available-for-sale securities		21,335	22,618	–	–
Purchase of available-for-sale securities		(38,616)	(32,973)	–	–
Proceeds from sale or redemption of held-to-maturity securities		982	957	–	–
Purchase of held-to-maturity securities		(676)	(2,113)	–	–
Purchase of investment properties		(3,104)	(5,694)	–	–
Purchase of property, plant and equipment		(203)	(114)	(91)	(72)
Dividends received from subsidiaries		–	–	801	487
<b>Net cash used in investing activities</b>		<b>(28,517)</b>	<b>(20,338)</b>	<b>(22,073)</b>	<b>(12,994)</b>
<b>Cash flows from financing activities</b>					
Bank loans raised		1,601	3,106	–	–
Proceeds from issue of other debt securities		24,502	22,992	–	–
Redemption of other debt securities issued		(23,686)	(22,527)	–	–
Capital injection by non-controlling interests		333	14	–	–
Dividends paid to non-controlling interests		(10)	(13)	–	–
<b>Net cash from financing activities</b>		<b>2,740</b>	<b>3,572</b>	<b>–</b>	<b>–</b>
<b>Net increase in cash and cash equivalents</b>		<b>95,879</b>	<b>59,902</b>	<b>97,686</b>	<b>60,375</b>
<b>Cash and cash equivalents at 1 January</b>		<b>374,756</b>	<b>322,907</b>	<b>366,105</b>	<b>313,782</b>
<b>Effect of foreign exchange rate changes</b>		<b>(8,685)</b>	<b>(8,053)</b>	<b>(8,683)</b>	<b>(8,052)</b>
<b>Cash and cash equivalents at 31 December</b>	29	<b>461,950</b>	<b>374,756</b>	<b>455,108</b>	<b>366,105</b>

The notes on pages 155 to 237 form part of these financial statements.

# Exchange Fund – Notes to the Financial Statements

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

## 1 PRINCIPAL ACTIVITIES

The Monetary Authority, under delegated authority from the Financial Secretary as Controller of the Exchange Fund (the Fund), manages the Fund in accordance with the provisions of the Exchange Fund Ordinance (Cap. 66). The principal activities of the Fund are safeguarding the exchange value of the currency of Hong Kong and maintaining the stability and integrity of Hong Kong's monetary and financial systems.

The assets of the Fund are managed as four portfolios: the Backing Portfolio, the Investment Portfolio, the Long-Term Growth Portfolio and the Strategic Portfolio. The assets of the Backing Portfolio fully match the Monetary Base, under Hong Kong's Currency Board system. The Investment Portfolio is invested primarily in the bond and equity markets of the member countries of the Organisation for Economic Co-operation and Development. The Long-Term Growth Portfolio holds private equity and real estate investments. The Strategic Portfolio holds shares in Hong Kong Exchanges and Clearing Limited acquired by the Government of the Hong Kong Special Administrative Region (HKSAR) for the account of the Fund for strategic purposes. Operating segment information is set out in note 30.

## 2 SIGNIFICANT ACCOUNTING POLICIES

### 2.1 Statement of compliance

These financial statements have been prepared in accordance with all applicable Hong Kong Financial Reporting Standards (HKFRSs), which is a collective term that includes all applicable individual Hong Kong Financial Reporting Standards, Hong Kong Accounting Standards (HKASs) and Interpretations issued by the Hong Kong Institute of Certified Public Accountants (HKICPA), and accounting principles generally accepted in Hong Kong. A summary of the significant accounting policies adopted by the Fund and its subsidiaries (together referred to as the Group) is set out below.

The HKICPA has issued certain new and revised HKFRSs that are first effective or available for early adoption for the current accounting period. Note 3 provides information on the changes, if any, in accounting policies resulting from initial adoption of these developments to the extent that they are relevant to the Group for the current and prior accounting periods reflected in these financial statements.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

### 2.2 Basis of preparation of the financial statements

The Group financial statements include the financial statements of the Group as well as the Group's interests in associates and joint ventures. The principal activities of the principal subsidiaries, associates and joint ventures are shown in notes 16 and 17.

The measurement basis used in the preparation of the financial statements is historical cost except that the following assets and liabilities are stated at their fair values as explained in the accounting policies set out below:

- trading financial instruments (note 2.6.2.1);
- financial assets and financial liabilities designated at fair value (note 2.6.2.2);
- available-for-sale securities (note 2.6.2.5);
- gold (note 2.11); and
- investment properties (note 2.12).

The preparation of financial statements in conformity with HKFRSs requires management to make judgements, estimates and assumptions that affect the application of policies and the reported amounts of assets, liabilities, income and expenditure. The estimates and associated assumptions are based on experience and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgements about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

Note 18 contains information about the assumptions relating to fair value estimation of investment properties. Note 36 contains information about the assumptions relating to fair value estimation of financial instruments. Apart from the accounting judgements involving these fair value estimations, there are no other critical accounting judgements involved in the application of the Group's accounting policies.

### 2.3 Subsidiaries and non-controlling interests

A subsidiary is an entity controlled by the Group. The Group controls an entity when it is exposed, or has rights, to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. When assessing whether the Group has power, only substantive rights (held by the Group and other parties) are considered.



## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

An investment in a subsidiary is consolidated into the Group financial statements from the date that control commences until the date that control ceases.

Intra-group balances, transactions and cash flows and any unrealised profits and losses arising from intra-group transactions are eliminated in full in preparing the Group financial statements.

Non-controlling interests represent the equity in a subsidiary not attributable directly or indirectly to the Fund, and in respect of which the Group has not agreed any additional terms with the holders of those interests which would result in the Group as a whole having a contractual obligation in respect of those interests that meets the definition of a financial liability. Non-controlling interests are presented in the Group balance sheet within equity, separately from equity attributable to the owner of the Fund. Non-controlling interests in the results of the Group are presented on the face of the Group income and expenditure account and the Group statement of comprehensive income as an allocation of the surplus or deficit and total comprehensive income or loss for the year between non-controlling interests and the owner of the Fund.

In the balance sheet of the Fund, its investments in subsidiaries are stated at cost less impairment losses, if any (note 2.14).

### 2.4 Associates and joint ventures

An associate is an entity in which the Group has significant influence, but not control or joint control, over its management, through its power to participate in the financial and operating policy decisions.

A joint venture is a type of joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. Joint control is the contractually agreed sharing of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control.

An interest in an associate or a joint venture is accounted for in the Group financial statements under the equity method and is initially recorded at cost, adjusted for any excess or deficit of the Group's share of the acquisition-date fair values of the investee's identifiable net assets over the cost of the investment (if any). Thereafter, the investment is adjusted for the post acquisition change in the Group's share of the net assets of the associate or the joint venture and any impairment loss relating to the investment.

The Group income and expenditure account and statement of comprehensive income include the Group's share of the post-tax results of the associates and the joint ventures for the year. When the Group's share of losses exceeds its interest in the associates or the joint ventures, the Group's interest is reduced to nil and recognition of further losses is discontinued except to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associates or the joint ventures. For this purpose, the Group's interest is the carrying amount of the investment under the equity method together with the Group's long-term interests that in substance form part of the Group's net investment in the associates or the joint ventures.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

Unrealised profits and losses resulting from transactions between the Group and its associates and joint ventures are eliminated to the extent of the Group's interests in the associates or the joint ventures.

When the Group ceases to have significant influence over an associate or joint control over a joint venture, it is accounted for as a disposal of the entire interest in the associate or the joint venture, with a resulting gain or loss being recognised in the income and expenditure account. Any interest retained in the associate or the joint venture at the date when significant influence or joint control is lost is recognised at fair value and this amount is regarded as the fair value on initial recognition of a financial asset (note 2.6.1).

In the balance sheet of the Fund, interests in associates and joint ventures are stated at cost less impairment losses, if any (note 2.14).

### 2.5 Fair value measurement

The Group measures certain financial instruments, all investment properties and gold at fair value at each balance sheet date. The fair values of financial instruments measured at amortised cost are disclosed in note 36.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- (a) in the principal market for the asset or liability, or
- (b) in the absence of a principal market, in the most advantageous market for the asset or liability.

The principal or the most advantageous market must be accessible by the Group.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset for its highest and best use.

The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

The Group measures fair values using the following fair value hierarchy that reflects the significance of inputs used in making the measurements:

- (a) Level 1 – fair values are quoted prices (unadjusted) in active markets for identical assets or liabilities;
- (b) Level 2 – fair values are determined involving inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (as prices) or indirectly (derived from prices); and
- (c) Level 3 – fair values are determined with inputs that are not based on observable market data (unobservable inputs).

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Group determines whether transfers have occurred between levels in the hierarchy by re-assessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the balance sheet date.

### 2.6 Financial assets and financial liabilities

#### 2.6.1 *Initial recognition*

The Group classifies its financial assets and financial liabilities into different categories at inception, depending on the purpose for which the assets were acquired or the liabilities were incurred. The categories are: trading financial instruments, financial assets and financial liabilities designated at fair value, loans and receivables, held-to-maturity securities, available-for-sale securities and other financial liabilities.

An analysis of the Group's financial assets and financial liabilities by category is set out in note 6.

Financial assets and financial liabilities are measured initially at fair value plus, in the case of a financial asset or financial liability not at fair value through the income and expenditure account, transaction costs that are directly attributable to the acquisition of the financial assets or the issue of the financial liabilities. Transaction costs on trading financial instruments and financial assets and financial liabilities designated at fair value are expensed immediately.

The Group recognises financial assets and financial liabilities on the date it becomes a party to the contractual provisions of the instrument. Purchases or sales of derivative financial instruments are recognised using trade date accounting. Purchases or sales of trading liabilities and financial assets and financial liabilities designated at fair value, which are settled within the time frame established generally by regulation or convention in the market place concerned, are also recognised using trade date accounting.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 2.6.2 *Categorisation*

#### 2.6.2.1 Trading financial instruments

Derivatives that do not qualify for hedge accounting (note 2.9) are categorised as “trading” under HKAS 39, Financial Instruments: Recognition and Measurement.

Trading financial instruments are carried at fair value. Changes in the fair value are included in the income and expenditure account in the period in which they arise.

#### 2.6.2.2 Financial assets and financial liabilities designated at fair value

Financial assets and financial liabilities designated at fair value primarily consist of:

- financial assets and financial liabilities that are managed, evaluated and reported internally on a fair value basis; and
- debt securities issued by the Group through a subsidiary, The Hong Kong Mortgage Corporation Limited (HKMC), which contain embedded derivatives that significantly modify the cash flows that would otherwise be required under the contracts.

Financial assets and financial liabilities under this category are carried at fair value. Changes in the fair value are included in the income and expenditure account in the period in which they arise.

#### 2.6.2.3 Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market and which the Group has no intention of trading, other than those that the Group, upon initial recognition, designates as at fair value or as available-for-sale. This category includes placements with banks and other financial institutions, cash and money at call, and the loan portfolio purchased by the Group through the HKMC.

Loans and receivables are carried at amortised cost using the effective interest method, less impairment losses if any (note 2.10).

The effective interest method is a method of calculating the amortised cost of a financial asset or a financial liability and of allocating the interest income or interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument or, when appropriate, a shorter period to the net carrying amount of the financial asset or financial liability. When calculating the effective interest rate, the Group estimates cash flows considering all contractual terms of the financial instrument but does not consider future credit losses. The calculation includes all fees paid or received between parties to the contract that are an integral part of the effective interest rate, transaction costs and all other premiums or discounts.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 2.6.2.4 Held-to-maturity securities

Held-to-maturity securities are non-derivative financial assets with fixed or determinable payments and fixed maturity which the Group has the positive intention and ability to hold to maturity, other than (a) those that the Group, upon initial recognition, designates as at fair value or as available-for-sale; and (b) those that meet the definition of loans and receivables.

Held-to-maturity securities are carried at amortised cost using the effective interest method, less impairment losses if any (note 2.10).

### 2.6.2.5 Available-for-sale securities

Available-for-sale securities are non-derivative securities that are designated as available-for-sale or are not classified in any of the other categories above. They include securities intended to be held for an indefinite period of time, but which may be sold in response to needs for liquidity or changes in the market environment.

Available-for-sale securities are carried at fair value. Unrealised gains and losses arising from changes in the fair value are recognised in other comprehensive income and accumulated separately in the revaluation reserve, except for impairment losses, if any (note 2.10). Foreign exchange gains and losses on monetary items are recognised in the income and expenditure account. Foreign exchange gains and losses on non-monetary items are recognised in other comprehensive income.

The investment by the Fund in the shares of the Bank for International Settlements is held in order to participate in it on a long-term basis. As these shares do not have a quoted market price in an active market and the fair value cannot be reliably measured, they are carried at cost less impairment losses, if any (note 2.10).

When available-for-sale securities are sold, gains or losses on disposal include the difference between the net sale proceeds and the carrying amount, and the accumulated fair value adjustments which are released from equity to the income and expenditure account.

### 2.6.2.6 Other financial liabilities

Other financial liabilities are financial liabilities other than trading liabilities and those designated at fair value.

Other financial liabilities repayable on demand are stated at the principal amount payable. These include Certificates of Indebtedness, government-issued currency notes and coins in circulation (note 2.6.2.7), the balance of the banking system, placements by Fiscal Reserves (Operating and Capital Reserves), placements by the Bond Fund and placements by the Deposit Protection Scheme Fund.

Other financial liabilities with a fixed maturity and a predetermined rate are carried at amortised cost using the effective interest method. These include placements by banks and other financial institutions, other placements by HKSAR Government funds and statutory bodies, bank loans and other debt securities (other than those which contain embedded derivatives) issued by the Group through the HKMC.

Placements by Fiscal Reserves (Future Fund) which are repayable on 31 December 2025 (unless otherwise directed by the Financial Secretary according to the terms of the placements) are stated at the principal amount payable. Interest payable on these placements is calculated at a composite rate determined annually (note 2.16.1) and compounded on an annual basis until maturity. If the composite rate is negative for a year, the negative return will first be offset against the balance of interest payable, with the excess portion (if any) written off against the principal amount payable. When the composite rate turns positive in subsequent years, the return will be used to recover fully or partially the amount written off.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

### 2.6.2.7 Certificates of Indebtedness and government-issued currency notes and coins in circulation

As backing for the banknote issues, each note-issuing bank is required to hold a non-interest-bearing Certificate of Indebtedness issued by the Financial Secretary, which is redeemable on demand. Payments for the issue and redemption of banknotes against these Certificates are made in US dollars at the fixed exchange rate of US\$1=HK\$7.80. Consistent with the requirement for backing banknote issues with US dollars, the issue and redemption of government-issued currency notes and coins are conducted with an agent bank against US dollars at the fixed exchange rate of US\$1=HK\$7.80.

The Group's liabilities in respect of Certificates of Indebtedness represent the US dollars payable to the note-issuing banks on redemption of the Certificates. The Group's liabilities in respect of government-issued currency notes and coins represent the US dollars payable to the agent bank when they are redeemed. Certificates of Indebtedness in issue and government-issued currency notes and coins in circulation are stated in the financial statements at the Hong Kong dollar equivalent of the US dollars required for their redemption using the closing exchange rate at the balance sheet date.

### 2.6.3 *Derecognition*

A financial asset is derecognised when the contractual rights to receive the cash flows from the financial asset expire, or where the financial asset together with substantially all the risks and rewards of ownership have been transferred.

The Group uses the weighted average method to determine realised gains and losses to be recognised in the income and expenditure account on derecognition.

A financial liability is derecognised when the obligation specified in the contract is discharged, is cancelled or expires.

Liabilities for Exchange Fund Bills and Notes (EFBN) in issue are derecognised when they are repurchased as a result of market making activities. The repurchase is considered a redemption of the debt.

### 2.6.4 *Offsetting*

Financial assets and financial liabilities are offset and the net amount is reported in the balance sheet where there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis, or realise the assets and settle the liabilities simultaneously. The legally enforceable right must not be contingent on future events and must be enforceable in the normal course of business and in the event of default, insolvency or bankruptcy of the Group or the counterparty.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

### 2.6.5 *Embedded derivatives*

An embedded derivative is a component of a hybrid (combined) instrument that includes both the derivative and a host contract with the effect that some of the cash flows of the combined instrument vary in a way similar to a stand-alone derivative.

An embedded derivative is separated from the host contract and accounted for as a derivative when (a) the economic characteristics and risks of the embedded derivative are not closely related to the host contract; and (b) the hybrid (combined) instrument is not measured at fair value with changes in fair value recognised in the income and expenditure account.

Where the embedded derivative is separated, the host contract is accounted for according to its category (note 2.6.2). The embedded derivative is measured at fair value with change in fair value recognised in the income and expenditure account.

### 2.7 *Repurchase and reverse repurchase transactions*

Securities sold subject to a simultaneous agreement to repurchase these securities at a certain later date at a fixed price (repurchase agreements) are retained on the balance sheet without changes in their measurement. The proceeds from the sale are reported as liabilities in “placements by banks and other financial institutions” and are carried at amortised cost.

Conversely, securities purchased under agreements to resell (reverse repurchase agreements) are reported as receivables in “placements with banks and other financial institutions” and are carried at amortised cost.

Interest earned on reverse repurchase agreements and interest incurred on repurchase agreements are recognised as interest income and interest expense respectively, over the life of each agreement using the effective interest method.

### 2.8 *Securities lending agreements*

Where securities are loaned with the receipt of cash or other securities as collateral, they are retained on the balance sheet without changes in their measurement. Where cash collateral is received, a liability is recorded in respect of the cash received in “placements by banks and other financial institutions”. Securities received as collateral are not recognised in the financial statements.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

### 2.9 Hedging

Hedge accounting recognises the offsetting effects on income and expenditure of changes in the fair values of the hedging instrument and the hedged item.

The Group documents, at the inception of the transaction, the relationship between hedging instruments and hedged items, as well as its risk management objective and strategy for undertaking various hedge transactions. The Group also documents its assessment, both at hedge inception and on an ongoing basis, of whether the derivatives that are used in hedging transactions are highly effective in offsetting changes in fair values or cash flows of hedged items.

#### 2.9.1 Fair value hedge

A fair value hedge seeks to offset risks of changes in the fair value of a recognised asset or liability that will give rise to a gain or loss being recognised in the income and expenditure account.

Derivatives that are designated and qualify as fair value hedges are measured at fair value, with fair value changes recognised in the income and expenditure account, together with any changes in the fair value of the hedged item attributable to the risk being hedged.

When (a) a hedging instrument expires or is sold, terminated or exercised; (b) a hedge no longer meets the criteria for hedge accounting; or (c) the Group revokes designation of the hedge relationship, any adjustment to the carrying amount of a hedged item for which the effective interest method is used, is amortised to the income and expenditure account over the period to maturity.

#### 2.9.2 Cash flow hedge

Where a derivative is designated as a hedge of the variability in cash flows of a recognised asset or liability or a highly probable forecast transaction, the effective portion of any gain or loss from remeasurement of the derivative to fair value is recognised in other comprehensive income and accumulated separately in equity. The ineffective portion of any gain or loss is recognised immediately in the income and expenditure account.

Amounts previously recognised in other comprehensive income and accumulated in equity are recycled to the income and expenditure account in the periods in which the hedged item will affect the income and expenditure account.

When (a) a hedging instrument expires or is sold, terminated or exercised; (b) a hedge no longer meets the criteria for hedge accounting; or (c) the Group revokes designation of the hedge relationship, any cumulative gain or loss existing in equity at that time remains in equity and is recognised when the forecast transaction is ultimately recognised in the income and expenditure account. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was recognised in equity is immediately transferred to the income and expenditure account.



## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 2.10 Impairment of financial assets

The carrying amounts of loans and receivables, held-to-maturity securities and available-for-sale securities are reviewed at each balance sheet date to determine whether there is objective evidence of impairment. Objective evidence that a financial asset is impaired includes observable data that come to the attention of the Group about one or more of the following loss events which have an impact on the future cash flows of the financial asset that can be estimated reliably:

- significant financial difficulties of the issuer or borrower;
- a breach of contract such as default or delinquency in interest or principal payments;
- it becoming probable that the issuer or borrower will enter bankruptcy or other financial reorganisation;
- significant changes in the technological, market, economic or legal environment that have an adverse effect on the issuer or borrower;
- disappearance of an active market for that financial asset; and
- a significant or prolonged decline in the fair value of an investment in an equity instrument below its cost.

The Group first assesses whether objective evidence of impairment exists individually for financial assets that are individually significant. If the Group determines that no objective evidence of impairment exists for an individually assessed financial asset, whether significant or not, it includes that asset in a group of financial assets with similar credit risk characteristics and collectively assesses them for impairment. Financial assets that are individually assessed for impairment and for which an impairment loss is or continues to be recognised are not included in a collective assessment of impairment. For exposures which are not individually significant, the Group will assess impairment collectively.

If any such evidence exists, the carrying amount of the financial asset is reduced to the estimated recoverable amount and the impairment loss is determined and recognised as described below.

For loans and receivables and held-to-maturity securities, an impairment loss is the difference between the asset's carrying amount and the present value of estimated future cash flows discounted at the asset's original effective interest rate. The carrying amount of the asset is reduced through the use of an allowance account and the impairment loss is recognised in the income and expenditure account.

If in a subsequent period the amount of such impairment loss decreases and the decrease can be linked objectively to an event occurring after the impairment loss was recognised, the impairment loss is reversed through the income and expenditure account. A reversal of impairment losses is limited to the asset's carrying amount that would have been determined had no impairment loss been recognised in prior years.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

For available-for-sale securities carried at fair value, the cumulative loss that has been recognised in the revaluation reserve is reclassified to the income and expenditure account. The amount of cumulative loss that is recognised in the income and expenditure account is the difference between the acquisition cost (net of any principal repayment and amortisation) and the current fair value, less any impairment loss on that financial asset previously recognised in the income and expenditure account. Impairment losses for debt securities are reversed if the subsequent increase in fair value can be objectively related to an event occurring after the impairment loss was recognised. Reversals of impairment losses in such circumstances are recognised in the income and expenditure account. Impairment losses for equity securities are not reversed through the income and expenditure account. Any subsequent increase in the fair value of equity securities is recognised in other comprehensive income.

For available-for-sale equity securities carried at cost, the impairment loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows discounted at the current market rate of return for a similar instrument. Such impairment losses are not reversed.

### 2.11 Gold

Gold is carried at fair value. Changes in the fair value of gold are included in the income and expenditure account in the period in which they arise.

### 2.12 Investment properties

Properties that are held for long-term rental yields, capital appreciation or both, and that are not occupied by the Group, are classified as investment properties.

Investment properties are recognised initially at cost, including related transaction costs. After initial recognition, investment properties are measured at fair value as assessed by independent professional valuers, or by the management based on the latest valuation made by the independent professional valuers. Fair value of the investment properties are measured based on the market or income approach. Under the market approach, the value is determined based on comparable transactions. For the income approach, the fair value is determined using valuation techniques including discounted cash flow and income capitalisation methods.

Any gain or loss arising from a change in fair value or the disposal of an investment property is recognised directly in the income and expenditure account. Rental income from investment properties is recognised in the income and expenditure account in equal instalments over the periods covered by the lease term, except where an alternative basis is more representative of the pattern of benefits to be derived from the use of the leased asset.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 2.13 Property, plant and equipment

The following items of property, plant and equipment are stated in the balance sheet at cost less accumulated depreciation and any impairment losses (note 2.14):

- a building held for own use situated on freehold land;
- land classified as held under a finance lease and building held for own use situated thereon; and
- plant and equipment, including plant, machinery, furniture, fixtures, equipment, motor vehicles and personal computers.

Intangible assets including computer software licences and system development costs are included in property, plant and equipment.

Freehold land is not depreciated. For other items of property, plant and equipment, depreciation is calculated to write off their cost less their estimated residual value, if any, on a straight-line basis over their estimated useful lives as follows:

- |   |  |
|---|--|
| – leasehold land classified as held under a finance lease | over the unexpired term of lease   |
| – buildings situated on freehold land                     | 39 years   |
| – buildings situated on leasehold land                    | over the shorter of the unexpired term of lease and their estimated useful lives |
| – plant and equipment                                     | 3 to 15 years  |
| – computer software licences and system development costs | 3 to 5 years   |

A gain or loss arising from the disposal of an item of property, plant and equipment is determined as the difference between the net disposal proceeds and the carrying amount of the asset and is recognised in the income and expenditure account on the date of disposal.

### 2.14 Impairment of other assets

The carrying amounts of other assets, including interests in subsidiaries, interests in associates and joint ventures, and property, plant and equipment, are reviewed at each balance sheet date to identify any indication of impairment.

If any such indication exists, an impairment loss is recognised in the income and expenditure account whenever the carrying amount of an asset exceeds its recoverable amount. The recoverable amount of an asset is the greater of its fair value less costs of disposal and value in use.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

### 2.15 Cash and cash equivalents

Cash and cash equivalents comprise cash and money at call, placements with banks and other financial institutions and short-term highly liquid investments that are readily convertible to known amounts of cash and subject to an insignificant risk of changes in value, having been within three months of maturity when placed or acquired.

### 2.16 Revenue and expenditure recognition

#### 2.16.1 Interest income and expense

Interest on the majority of the placements by Fiscal Reserves (Operating and Capital Reserves) and placements by HKSAR Government funds and statutory bodies is payable at a fixed rate determined annually (notes 23 and 24). Interest on these placements is recognised in the income and expenditure account on an accrual basis, using the effective interest method.

Interest on the placements by Fiscal Reserves (Future Fund) is payable at a composite rate which is determined annually and linked with the performance of certain portfolios of assets under the Exchange Fund (note 23). Interest on these placements is recognised in the income and expenditure account on an accrual basis, based on the performance of those portfolios.

Interest income and expense for all other interest-bearing financial assets and financial liabilities is recognised in the income and expenditure account on an accrual basis, using the effective interest method.

Once a financial asset or a group of similar financial assets has been written down as a result of an impairment loss, interest income is thereafter recognised using the rate of interest used to discount the future cash flows for the purpose of measuring the impairment loss.

#### 2.16.2 Net realised and unrealised gains/(losses)

Realised gains or losses on financial instruments are recognised in the income and expenditure account when the financial instruments are derecognised.

Changes in fair value of trading financial instruments and financial assets and financial liabilities designated at fair value are recognised as unrealised gains or losses in the income and expenditure account in the period in which they arise.

#### 2.16.3 Dividend and other income

Dividend income from listed equity securities is recognised in the income and expenditure account when the share price is quoted ex-dividend. Dividend income from unlisted equity securities is recognised when the shareholder's right to receive payment is unconditionally established.

Bank licence fees are fees receivable from authorized institutions under the Banking Ordinance (Cap. 155) and are accounted for in the period when the fees become receivable.

Other income includes rental income, Central Moneymarkets Unit fee income and net insurance premiums earned from the mortgage insurance business of the HKMC. Rental income is recognised on a straight-line basis over the lease term. The net premiums are recognised on a time-apportioned basis during the time the insurance coverage is effective. Other income is accounted for in the period when it becomes receivable.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

### 2.16.4 *Contributions to staff retirement schemes*

The Group operates several defined contribution schemes, including the Mandatory Provident Fund Scheme. Under these schemes, contributions payable each year are charged to the income and expenditure account. The assets of the staff retirement schemes are held separately from those of the Group.

### 2.16.5 *Rental payments under operating leases*

Leases where substantially all the rewards and risks of ownership remain with the lessor are classified as operating leases. Rental payments made under operating leases are charged to the income and expenditure account on a straight-line basis over the period of the relevant leases.

### 2.16.6 *Income tax*

Income tax payable on profits of subsidiaries is recognised as an expense in the period in which profits arise.

Deferred tax assets and liabilities arise from deductible and taxable temporary differences respectively, being the differences between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes. Deferred tax assets are recognised to the extent that it is probable that future taxable profit will be available against which the assets can be utilised. Deferred tax liabilities are provided in full. For investment properties that are measured at fair value, the amount of deferred tax recognised is measured using the tax rates that would apply on sale of those assets at their carrying value at the reporting date on the presumption that their carrying amounts are recovered entirely through sale. In all other cases, the amount of deferred tax recognised is measured based on the expected manner of realisation or settlement of the carrying amount of the assets and liabilities, using tax rates enacted or substantively enacted at the balance sheet date. Deferred tax assets and liabilities are not discounted.

### 2.17 *Foreign currency translation*

The financial statements are presented in Hong Kong dollars, which is the Group's and the Fund's functional currency.

Foreign currency transactions during the year are translated into Hong Kong dollars using the spot exchange rates at the transaction dates. Monetary assets and liabilities denominated in foreign currencies are translated into Hong Kong dollars using the closing exchange rate at the balance sheet date.

Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign currency are translated into Hong Kong dollars using the spot exchange rates at the transaction dates. Non-monetary assets and liabilities that are measured at fair value in a foreign currency are translated into Hong Kong dollars using the closing exchange rates at the dates when the fair value is determined.

All foreign currency translation differences are presented in aggregate as "net exchange gain/(loss)" in the income and expenditure account. Although it is not practicable to disclose separately the net exchange gain/(loss) on financial assets and financial liabilities designated at fair value or on trading financial instruments, the majority of the exchange gains/(losses) relate to these two categories of financial instruments.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The results of foreign operations are translated into Hong Kong dollars at the exchange rates approximating the foreign exchange rates ruling at the dates of the transactions. Balance sheet items are translated into Hong Kong dollars at the closing foreign exchange rates at the end of the reporting period. The resulting exchange differences are recognised in other comprehensive income and accumulated separately in equity in the translation reserve.

On disposal of a foreign operation, the cumulative amount of the exchange differences relating to that foreign operation is reclassified from equity to the income and expenditure account when the profit or loss on disposal is recognised.

### 2.18 Related parties

For the purposes of these financial statements, a person or an entity is considered to be related to the Group if:

- (a) the person, or a close member of that person's family:
  - (i) has control or joint control over the Group;
  - (ii) has significant influence over the Group; or
  - (iii) is a member of the key management personnel of the Group.
- (b) any of the following conditions applies to the entity:
  - (i) the entity and the Group are members of the same group (which means that each parent, subsidiary and fellow subsidiary is related to the others);
  - (ii) the entity is an associate or joint venture of the Group (or an associate or joint venture of a member of a group of which the Group is a member);
  - (iii) the entity and the Group are joint ventures of the same third party;
  - (iv) the entity is a joint venture of another entity and the Group is an associate of that entity;
  - (v) the entity is a post-employment benefit plan for the benefit of employees of either the Group or an entity related to the Group;
  - (vi) the entity is controlled or jointly controlled by a person identified in (a);
  - (vii) a person identified in (a)(i) has significant influence over the entity or is a member of the key management personnel of the entity (or of a parent of the entity); or
  - (viii) the entity, or any member of a group of which it is a part, provides key management personnel services to the Group.

Close members of the family of a person are those family members who may be expected to influence, or be influenced by, that person in their dealings with the entity.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

### 2.19 Operating segments

Operating segments are reported in a manner consistent with the internal management reports provided to the chief operating decision maker. The Group comprises the following operating segments:

- management of funds under the Currency Board Operations, including the Backing Portfolio;
- management of funds representing the general reserve assets of the Fund, including the Investment Portfolio, the Long-Term Growth Portfolio and the Strategic Portfolio; and
- maintaining the stability and integrity of monetary and financial systems of Hong Kong, which includes banking supervision and monetary management, and the activities of Hong Kong FMI Services Limited, The Hong Kong Mortgage Corporation Limited and Hong Kong Note Printing Limited.

Details of the operating segments of the Group are set out in note 30.

## 3 CHANGES IN ACCOUNTING POLICIES

The HKICPA has issued certain new and revised HKFRSs that are effective for the current accounting period. These new standards and amendments do not have a material impact on the Group.

The Group has not applied any new standard or interpretation that is not yet effective for the current accounting period (note 37).

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 4 INCOME AND EXPENDITURE

#### (a) Investment income/(loss)

	Group		Fund	
	2016	2015	2016	2015
Interest income:				
– from derivative financial instruments	423	460	423	460
– from financial assets designated at fair value	22,464	15,640	22,459	15,626
– from other financial assets	2,474	1,901	1,459	789
	25,361	18,001	24,341	16,875
Dividend income:				
– from financial assets designated at fair value	12,243	13,490	11,986	12,906
– from other financial assets	1,500	785	10	10
– from subsidiaries	–	–	801	487
	13,743	14,275	12,797	13,403
Income from investment properties:				
– rental income	1,268	982	–	–
– change in fair value on revaluation	(805)	1,703	–	–
	463	2,685	–	–
Net realised and unrealised gains/(losses):				
– on derivative financial instruments	(2,443)	(395)	(2,230)	(191)
– on financial assets and financial liabilities designated at fair value	33,194	(10,288)	31,406	(9,640)
– on disposal of available-for-sale securities	6,954	10,554	–	–
– on gold	50	(71)	50	(71)
	37,755	(200)	29,226	(9,902)
Net exchange loss	(14,521)	(43,870)	(15,828)	(44,937)
<b>TOTAL</b>	<b>62,801</b>	<b>(9,109)</b>	<b>50,536</b>	<b>(24,561)</b>

Net realised and unrealised gains/(losses) included a loss of HK\$95 million (2015: HK\$332 million) on hedging instruments designated as fair value hedge and a gain of HK\$86 million (2015: HK\$328 million) on hedged items.



## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### (b) Interest expense on placements by Fiscal Reserves, HKSAR Government funds and statutory bodies

	Group and Fund	
	2016	2015
Interest on placements by Fiscal Reserves:		
– at a fixed rate determined annually <sup>1</sup>	23,042	46,667
– at a composite rate determined annually <sup>2</sup>	10,071	–
Interest on placements by HKSAR Government funds and statutory bodies:		
– at a fixed rate determined annually <sup>1</sup>	9,566	14,722
– at market-based rates	7	–
<b>TOTAL</b>	<b>42,686</b>	<b>61,389</b>

<sup>1</sup> This rate was fixed at 3.3% per annum for 2016 (2015: 5.5%) – notes 23, 24 and 28.

<sup>2</sup> The composite rate for 2016 was 4.5% per annum – notes 23 and 28.

### (c) Other interest expense

	Group		Fund	
	2016	2015	2016	2015
Interest on Exchange Fund Bills and Notes issued	2,161	698	2,161	698
Interest expense on derivative financial instruments	116	296	22	96
Interest expense on other debt securities issued designated at fair value and trading liabilities	3	2	2	1
Interest expense on other financial instruments	696	492	73	20
<b>TOTAL</b>	<b>2,976</b>	<b>1,488</b>	<b>2,258</b>	<b>815</b>

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### (d) Operating expenses

	Group		Fund	
	2016	2015	2016	2015
Staff costs				
Salaries and other staff costs	1,320	1,231	1,059	990
Retirement benefit costs	114	105	98	91
Premises and equipment expenses				
Depreciation	204	198	156	151
Rental expenses under operating leases	93	93	62	62
Other premises expenses	73	69	63	60
General operating costs				
Maintenance of office and computer equipment	105	89	93	78
Financial information and communication services	57	55	49	48
External relations	31	30	30	28
Public education and publicity	25	21	14	12
Service fees for financial infrastructure	50	85	50	85
Professional and other services	132	114	30	29
Training	10	8	7	6
Operating expenses relating to investment properties	156	92	–	–
Others	30	36	23	25
Investment management and custodian fees				
Management and custodian fees	1,355	1,417	1,232	1,170
Transaction costs	177	180	176	179
Withholding tax	453	508	453	508
Others	82	62	79	59
<b>TOTAL</b>	<b>4,467</b>	<b>4,393</b>	<b>3,674</b>	<b>3,581</b>

The aggregate emoluments of senior staff (Executive Directors and above) of the Group were as follows:

	Group	
	2016	2015
Fixed pay	75.8	73.9
Variable pay	21.5	18.8
Other benefits	11.1	10.3
	<b>108.4</b>	<b>103.0</b>

Other benefits shown above included provident funds, medical and life insurance, gratuity and annual leave accrued during the year. There were no other allowances or benefits-in-kind.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The numbers of senior staff (Executive Directors and above) of the Group whose emoluments including other benefits fell within the following bands were shown in the below table. The number of senior staff posts remained at 17. The higher figure in 2016 reflected staff movements during the year.

HK\$	Group	
	2016	2015
1,500,001 to 2,000,000	1	–
2,000,001 to 2,500,000	–	1
2,500,001 to 3,000,000	1	–
3,500,001 to 4,000,000	1	–
4,000,001 to 4,500,000	2	2
4,500,001 to 5,000,000	3	4
5,000,001 to 5,500,000	3	1
5,500,001 to 6,000,000	1	3
6,000,001 to 6,500,000	2	1
6,500,001 to 7,000,000	1	1
7,000,001 to 7,500,000	1	–
8,500,001 to 9,000,000	–	1
9,000,001 to 9,500,000	1	2
9,500,001 to 10,000,000	1	–
10,000,001 to 10,500,000	–	1
10,500,001 to 11,000,000	1	–
	<b>19</b>	<b>17</b>

### (e) Note and coin expenses

These represent reimbursements to the note-issuing banks in respect of note-issuing expenses and expenses incurred directly by the Fund in issuing government-issued currency notes and coins.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 5 INCOME TAX

#### (a) Income tax charged in the income and expenditure account

	Group		Fund	
	2016	2015	2016	2015
<b>Current tax</b>				
Hong Kong profits tax				
– Current year	27	66	–	–
– Over-provision in prior years	(9)	(13)	–	–
Taxation outside Hong Kong				
– Current year	2	9	–	–
– Over-provision in prior years	(4)	–	–	–
<b>Deferred tax</b>				
Charge for current year	41	61	–	–
	<b>57</b>	<b>123</b>	<b>–</b>	<b>–</b>

No provision for Hong Kong profits tax has been made for the Fund as it is an integral part of the government. The provision for Hong Kong profits tax relates to the tax liabilities of the Fund's subsidiaries. For 2016, it is calculated at 16.5% (2015: 16.5%) of the estimated assessable profits for the year. Tax for overseas subsidiaries is charged at the appropriate current rates of taxation ruling in the relevant countries.

Reconciliation between tax expense and accounting profit at applicable tax rates:

	Group		Fund	
	2016	2015	2016	2015
Surplus/(Deficit) before taxation	16,161	(74,132)	1,658	(90,597)
Surplus subject to tax in Hong Kong and elsewhere	5,387	5,666	–	–
Tax calculated at domestic tax rates in the respective countries	838	900	–	–
Tax effect of:				
non-deductible expenses	290	82	–	–
non-taxable income	(1,085)	(888)	–	–
tax losses not recognised	17	3	–	–
over-provision in prior years	(13)	(13)	–	–
others	10	39	–	–
Actual tax expense	57	123	–	–

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### (b) Tax (recoverable)/payable

	Note	Group		Fund	
		2016	2015	2016	2015
Tax recoverable	15	(12)	–	–	–
Tax payable	28	93	139	–	–
		81	139	–	–

### (c) Deferred tax

	Note	Group		Fund	
		2016	2015	2016	2015
Net deferred tax assets	15	(6)	(32)	–	–
Net deferred tax liabilities	28	111	115	–	–
		105	83	–	–

The major components of deferred tax (assets)/liabilities and the movements during the year are as follows:

		Group			
		Adjustments on bank loans and derivative financial instruments	Fair value change on financial instruments	Accelerated tax depreciation	Net deferred tax (assets)/liabilities
At 1 January 2015	(52)	78	21	15	62
Charged to the income and expenditure account	18	–	6	37	61
Charged/(credited) to other comprehensive income	–	(40)	–	1	(39)
Exchange differences	2	–	–	(3)	(1)
At 31 December 2015	(32)	38	27	50	83
At 1 January 2016	(32)	38	27	50	83
Charged to the income and expenditure account	30	–	11	–	41
Credited to other comprehensive income	–	(20)	–	–	(20)
Exchange differences	2	–	–	(1)	1
At 31 December 2016	–	18	38	49	105

There was no significant unprovided deferred tax as at 31 December 2016 and 2015.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 6 CATEGORIES OF FINANCIAL ASSETS AND FINANCIAL LIABILITIES

	Note	Group – 2016						
		Total	Trading financial instruments and hedging instruments	Financial assets and financial liabilities designated at fair value	Loans and receivables	Held-to-maturity securities	Available-for-sale securities	Other financial liabilities
Cash and money at call	7	207,587	–	–	207,587	–	–	–
Placements with banks and other financial institutions	8	203,704	–	–	203,704	–	–	–
Financial assets designated at fair value	9	3,057,356	–	3,057,356	–	–	–	–
Available-for-sale securities	10	132,849	–	–	–	–	132,849	–
Derivative financial instruments	11(a)	9,263	9,263	–	–	–	–	–
Held-to-maturity securities	12	9,932	–	–	–	9,932	–	–
Loan portfolio	13	9,534	–	–	9,534	–	–	–
Others		56,453	–	–	56,453	–	–	–
<b>FINANCIAL ASSETS</b>		<b>3,686,678</b>	<b>9,263</b>	<b>3,057,356</b>	<b>477,278</b>	<b>9,932</b>	<b>132,849</b>	<b>–</b>
Certificates of Indebtedness	20	405,345	–	–	–	–	–	405,345
Government-issued currency notes and coins in circulation	20	11,928	–	–	–	–	–	11,928
Balance of the banking system	21	259,593	–	–	–	–	–	259,593
Placements by banks and other financial institutions	22	56,136	–	–	–	–	–	56,136
Placements by Fiscal Reserves	23	914,598	–	–	–	–	–	914,598
Placements by HKSAR Government funds and statutory bodies	24	302,485	–	–	–	–	–	302,485
Exchange Fund Bills and Notes issued	25	960,982	–	960,982	–	–	–	–
Derivative financial instruments	11(a)	2,858	2,858	–	–	–	–	–
Bank loans	26	11,724	–	–	–	–	–	11,724
Other debt securities issued	27	34,233	–	137	–	–	–	34,096
Others		166,810	–	–	–	–	–	166,810
<b>FINANCIAL LIABILITIES</b>		<b>3,126,692</b>	<b>2,858</b>	<b>961,119</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>2,162,715</b>

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Note	Group – 2015						
		Total	Trading financial instruments and hedging instruments	Financial assets and financial liabilities designated at fair value	Loans and receivables	Held-to-maturity securities	Available-for-sale securities	Other financial liabilities
Cash and money at call	7	188,547	–	–	188,547	–	–	–
Placements with banks and other financial institutions	8	123,880	–	–	123,880	–	–	–
Financial assets designated at fair value	9	3,015,402	–	3,015,402	–	–	–	–
Available-for-sale securities	10	104,475	–	–	–	–	104,475	–
Derivative financial instruments	11(a)	5,831	5,831	–	–	–	–	–
Held-to-maturity securities	12	10,274	–	–	–	10,274	–	–
Loan portfolio	13	11,502	–	–	11,502	–	–	–
Others		22,689	–	–	22,689	–	–	–
<b>FINANCIAL ASSETS</b>		<b>3,482,600</b>	<b>5,831</b>	<b>3,015,402</b>	<b>346,618</b>	<b>10,274</b>	<b>104,475</b>	<b>–</b>
Certificates of Indebtedness	20	357,863	–	–	–	–	–	357,863
Government-issued currency notes and coins in circulation	20	11,335	–	–	–	–	–	11,335
Balance of the banking system	21	391,343	–	–	–	–	–	391,343
Placements by banks and other financial institutions	22	66,907	–	–	–	–	–	66,907
Placements by Fiscal Reserves	23	833,548	–	–	–	–	–	833,548
Placements by HKSAR Government funds and statutory bodies	24	280,846	–	–	–	–	–	280,846
Exchange Fund Bills and Notes issued	25	827,792	–	827,792	–	–	–	–
Derivative financial instruments	11(a)	3,256	3,256	–	–	–	–	–
Bank loans	26	11,318	–	–	–	–	–	11,318
Other debt securities issued	27	33,463	–	343	–	–	–	33,120
Others		113,537	–	–	–	–	–	113,537
<b>FINANCIAL LIABILITIES</b>		<b>2,931,208</b>	<b>3,256</b>	<b>828,135</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>2,099,817</b>

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Note	Fund – 2016						
		Total	Trading financial instruments	Financial assets and financial liabilities designated at fair value	Loans and receivables	Held-to- maturity securities	Available- for-sale securities	Other financial liabilities
Cash and money at call	7	206,954	–	–	206,954	–	–	–
Placements with banks and other financial institutions	8	179,712	–	–	179,712	–	–	–
Financial assets designated at fair value	9	3,042,754	–	3,042,754	–	–	–	–
Available-for-sale securities	10	493	–	–	–	–	493	–
Derivative financial instruments	11(a)	9,018	9,018	–	–	–	–	–
Others		55,100	–	–	55,100	–	–	–
<b>FINANCIAL ASSETS</b>		<b>3,494,031</b>	<b>9,018</b>	<b>3,042,754</b>	<b>441,766</b>	<b>–</b>	<b>493</b>	<b>–</b>
Certificates of Indebtedness	20	405,345	–	–	–	–	–	405,345
Government-issued currency notes and coins in circulation	20	11,928	–	–	–	–	–	11,928
Balance of the banking system	21	259,593	–	–	–	–	–	259,593
Placements by banks and other financial institutions	22	56,136	–	–	–	–	–	56,136
Placements by Fiscal Reserves	23	914,598	–	–	–	–	–	914,598
Placements by HKSAR Government funds and statutory bodies	24	302,485	–	–	–	–	–	302,485
Exchange Fund Bills and Notes issued	25	960,982	–	960,982	–	–	–	–
Derivative financial instruments	11(a)	929	929	–	–	–	–	–
Others		160,094	–	–	–	–	–	160,094
<b>FINANCIAL LIABILITIES</b>		<b>3,072,090</b>	<b>929</b>	<b>960,982</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>2,110,179</b>



## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Note	Fund – 2015						
		Total	Trading financial instruments	Financial assets and financial liabilities designated at fair value	Loans and receivables	Held-to- maturity securities	Available- for-sale securities	Other financial liabilities
Cash and money at call	7	187,835	–	–	187,835	–	–	–
Placements with banks and other financial institutions	8	102,681	–	–	102,681	–	–	–
Financial assets designated at fair value	9	3,002,620	–	3,002,620	–	–	–	–
Available-for-sale securities	10	493	–	–	–	–	493	–
Derivative financial instruments	11(a)	5,357	5,357	–	–	–	–	–
Others		21,966	–	–	21,966	–	–	–
<b>FINANCIAL ASSETS</b>		<b>3,320,952</b>	<b>5,357</b>	<b>3,002,620</b>	<b>312,482</b>	<b>–</b>	<b>493</b>	<b>–</b>
Certificates of Indebtedness	20	357,863	–	–	–	–	–	357,863
Government-issued currency notes and coins in circulation	20	11,335	–	–	–	–	–	11,335
Balance of the banking system	21	391,343	–	–	–	–	–	391,343
Placements by banks and other financial institutions	22	66,907	–	–	–	–	–	66,907
Placements by Fiscal Reserves	23	833,548	–	–	–	–	–	833,548
Placements by HKSAR Government funds and statutory bodies	24	280,846	–	–	–	–	–	280,846
Exchange Fund Bills and Notes issued	25	827,792	–	827,792	–	–	–	–
Derivative financial instruments	11(a)	1,102	1,102	–	–	–	–	–
Others		107,182	–	–	–	–	–	107,182
<b>FINANCIAL LIABILITIES</b>		<b>2,877,918</b>	<b>1,102</b>	<b>827,792</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>2,049,024</b>

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 7 CASH AND MONEY AT CALL

	Group		Fund	
	2016	2015	2016	2015
At amortised cost				
Balance with central banks	<b>66,307</b>	67,376	<b>66,307</b>	67,376
Balance with banks	<b>141,280</b>	121,171	<b>140,647</b>	120,459
<b>TOTAL</b>	<b>207,587</b>	188,547	<b>206,954</b>	187,835

### 8 PLACEMENTS WITH BANKS AND OTHER FINANCIAL INSTITUTIONS

	Group		Fund	
	2016	2015	2016	2015
At amortised cost				
Placements in respect of reverse repurchase agreements:				
– with central banks	<b>37,970</b>	38,729	<b>37,970</b>	38,729
– with banks and other financial institutions	<b>8,896</b>	2,368	<b>8,896</b>	2,368
Other placements:				
– with banks	<b>156,838</b>	82,783	<b>132,846</b>	61,584
<b>TOTAL</b>	<b>203,704</b>	123,880	<b>179,712</b>	102,681

# Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

## 9 FINANCIAL ASSETS DESIGNATED AT FAIR VALUE

	Group		Fund	
	2016	2015	2016	2015
At fair value				
<b>Debt securities</b>				
<b>Treasury bills and commercial paper</b>				
Listed outside Hong Kong	336,594	20,460	336,594	20,460
Unlisted	647,892	937,545	647,892	937,545
<b>Certificates of deposit</b>				
Unlisted	80,190	56,357	80,190	56,357
<b>Other debt securities</b>				
Listed in Hong Kong	3,966	222	3,966	222
Listed outside Hong Kong	1,035,088	1,057,009	1,035,088	1,056,995
Unlisted	375,178	401,700	362,423	390,420
<b>Total debt securities</b>	<b>2,478,908</b>	<b>2,473,293</b>	<b>2,466,153</b>	<b>2,461,999</b>
<b>Equity securities</b>				
Listed in Hong Kong	147,330	148,224	147,330	148,224
Listed outside Hong Kong	306,783	308,412	306,783	308,412
Unlisted	124,335	85,473	122,488	83,985
<b>Total equity securities</b>	<b>578,448</b>	<b>542,109</b>	<b>576,601</b>	<b>540,621</b>
<b>TOTAL</b>	<b>3,057,356</b>	<b>3,015,402</b>	<b>3,042,754</b>	<b>3,002,620</b>

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 10 AVAILABLE-FOR-SALE SECURITIES

	Group		Fund	
	2016	2015	2016	2015
<b>Debt securities, at fair value</b>				
Listed in Hong Kong	1,482	1,650	–	–
Listed outside Hong Kong	1,880	808	–	–
Unlisted	2,624	3,267	–	–
	5,986	5,725	–	–
<b>Equity securities</b>				
Listed in Hong Kong, at fair value	992	913	–	–
Unlisted, at cost	493	493	493	493
	1,485	1,406	493	493
<b>Investment funds, at fair value</b>				
Unlisted	125,378	97,344	–	–
<b>TOTAL</b>	<b>132,849</b>	<b>104,475</b>	<b>493</b>	<b>493</b>

The Group's investment in unlisted equity securities as at 31 December 2016 represents a holding of 4,285 shares (2015: 4,285 shares) in the Bank for International Settlements. The nominal value of each share is 5,000 Special Drawing Rights and is 25% paid up (note 33(a)). Investment in unlisted investment funds mainly represents the Group's holding of private equity funds under the Long-Term Growth Portfolio.

### 11 DERIVATIVE FINANCIAL INSTRUMENTS

Derivative financial instruments refer to financial contracts whose value depends on the value of one or more underlying assets or indices with settlement at a future date.

The Group uses derivative financial instruments to manage its exposures to market risk and to facilitate the implementation of investment strategies. The principal derivative financial instruments used are interest rate and currency swap contracts, forward foreign exchange contracts and currency option contracts, which are primarily over-the-counter derivatives, as well as exchange-traded futures contracts.

Market risk arising from derivative financial instruments is included as part of the overall market risk exposure. The credit risk arising from these transactions is marked against the overall credit exposure to individual counterparties. The financial risk management approaches are outlined in note 35.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### (a) Fair values of derivative financial instruments

An analysis of the fair values of derivative financial instruments held by product type is set out below:

	Group				Fund			
	2016		2015		2016		2015	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
<b>Derivatives categorised as trading financial instruments</b>								
Interest rate derivatives								
Interest rate swap contracts	489	468	1,242	365	482	242	1,223	33
Interest rate futures contracts	–	1	–	1	–	1	–	1
Equity derivatives								
Equity index futures contracts	184	104	485	186	184	104	485	186
Currency derivatives								
Forward foreign exchange contracts	8,310	464	3,194	794	8,310	464	3,194	794
Currency option contracts	–	–	406	27	–	–	406	27
Bond derivatives								
Bond futures contracts	17	79	11	49	17	79	11	49
Commodity derivatives								
Commodity futures contracts	25	39	38	12	25	39	38	12
	9,025	1,155	5,376	1,434	9,018	929	5,357	1,102
<b>Derivatives designated as hedging instruments in fair value hedges</b>								
Interest rate derivatives								
Interest rate swap contracts	238	101	455	2	–	–	–	–
Currency derivatives								
Currency swap contracts	–	1,602	–	1,820	–	–	–	–
	238	1,703	455	1,822	–	–	–	–
<b>TOTAL</b>	<b>9,263</b>	<b>2,858</b>	<b>5,831</b>	<b>3,256</b>	<b>9,018</b>	<b>929</b>	<b>5,357</b>	<b>1,102</b>

The fair value hedges consist of currency and interest rate swap contracts that are used to protect against changes in the fair value of certain fixed-rate securities due to movements in market interest rates.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### (b) Notional amounts of derivative financial instruments

An analysis of the notional amounts of derivative financial instruments held at the balance sheet date based on the remaining periods to settlement is set out below. The notional amounts of these instruments indicate the volume of outstanding transactions and do not represent the amounts at risk.

	Group									
	Notional amounts with remaining life of									
	2016					2015				
	Total	3 months or less	1 year or less but over 3 months	5 years or less but over 1 year	Over 5 years	Total	3 months or less	1 year or less but over 3 months	5 years or less but over 1 year	Over 5 years
<b>Derivatives categorised as trading financial instruments</b>										
Interest rate derivatives										
Interest rate swap contracts	41,579	–	15,600	13,334	12,645	42,476	–	273	27,828	14,375
Interest rate futures contracts	5,365	944	1,742	2,679	–	9,274	1,579	4,046	3,649	–
Equity derivatives										
Equity index futures contracts	66,630	66,630	–	–	–	72,710	72,710	–	–	–
Currency derivatives										
Forward foreign exchange contracts	386,843	322,235	64,608	–	–	252,777	173,414	79,363	–	–
Currency option contracts	–	–	–	–	–	48,293	48,293	–	–	–
Bond derivatives										
Bond futures contracts	47,564	47,564	–	–	–	34,939	34,939	–	–	–
Commodity derivatives										
Commodity futures contracts	10,378	7,414	2,902	62	–	4,746	2,980	1,766	–	–
	558,359	444,787	84,852	16,075	12,645	465,215	333,915	85,448	31,477	14,375
<b>Derivatives designated as hedging instruments in fair value hedges</b>										
Interest rate derivatives										
Interest rate swap contracts	19,233	2,340	8,453	6,947	1,493	14,228	445	5,428	7,002	1,353
Currency derivatives										
Currency swap contracts	7,217	5,594	–	570	1,053	14,568	7,041	1,828	5,002	697
	26,450	7,934	8,453	7,517	2,546	28,796	7,486	7,256	12,004	2,050
<b>TOTAL</b>	<b>584,809</b>	<b>452,721</b>	<b>93,305</b>	<b>23,592</b>	<b>15,191</b>	<b>494,011</b>	<b>341,401</b>	<b>92,704</b>	<b>43,481</b>	<b>16,425</b>

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund									
	Notional amounts with remaining life of									
	2016					2015				
	Total	3 months or less	1 year or less but over 3 months	5 years or less but over 1 year	Over 5 years	Total	3 months or less	1 year or less but over 3 months	5 years or less but over 1 year	Over 5 years
<b>Derivatives categorised as trading financial instruments</b>										
Interest rate derivatives										
Interest rate swap contracts	33,845	–	15,600	5,600	12,645	33,846	–	–	19,593	14,253
Interest rate futures contracts	5,365	944	1,742	2,679	–	9,274	1,579	4,046	3,649	–
Equity derivatives										
Equity index futures contracts	66,630	66,630	–	–	–	72,710	72,710	–	–	–
Currency derivatives										
Forward foreign exchange contracts	386,843	322,235	64,608	–	–	252,777	173,414	79,363	–	–
Currency option contracts	–	–	–	–	–	48,293	48,293	–	–	–
Bond derivatives										
Bond futures contracts	47,564	47,564	–	–	–	34,939	34,939	–	–	–
Commodity derivatives										
Commodity futures contracts	10,378	7,414	2,902	62	–	4,746	2,980	1,766	–	–
<b>TOTAL</b>	<b>550,625</b>	<b>444,787</b>	<b>84,852</b>	<b>8,341</b>	<b>12,645</b>	<b>456,585</b>	<b>333,915</b>	<b>85,175</b>	<b>23,242</b>	<b>14,253</b>

## 12 HELD-TO-MATURITY SECURITIES

	Group		Fund	
	2016	2015	2016	2015
At amortised cost				
<b>Debt securities</b>				
Listed in Hong Kong	4,359	4,431	–	–
Listed outside Hong Kong	1,835	1,685	–	–
Unlisted	3,738	4,158	–	–
<b>TOTAL</b>	<b>9,932</b>	<b>10,274</b>	<b>–</b>	<b>–</b>

Fair value information of the above held-to-maturity securities is provided in note 36.2.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 13 LOAN PORTFOLIO

	Group		Fund	
	2016	2015	2016	2015
Mortgage loans, at amortised cost	9,085	10,935	–	–
Non-mortgage loans, at amortised cost	450	568	–	–
Allowance for loan impairment	(1)	(1)	–	–
<b>TOTAL</b>	<b>9,534</b>	<b>11,502</b>	<b>–</b>	<b>–</b>

### 14 GOLD

	Group and Fund	
	2016	2015
Gold, at fair value		
66,798 ounces (2015: 66,798 ounces)	600	550

The fair value of gold is based on quoted price in an active market. It is classified under Level 1 of the fair value hierarchy.

### 15 OTHER ASSETS

	Group		Fund	
	2016	2015	2016	2015
Interest and dividends receivable	7,992	7,653	7,648	7,343
Unsettled sales and redemption of securities	31,558	7,016	31,558	7,016
Prepayments, receivables and other assets	16,403	7,633	15,209	7,122
Staff housing loans	162	158	162	158
Loan to the International Monetary Fund	540	355	540	355
Tax recoverable	12	–	–	–
Deferred tax assets	6	32	–	–
<b>TOTAL</b>	<b>56,673</b>	<b>22,847</b>	<b>55,117</b>	<b>21,994</b>



## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 16 INTERESTS IN SUBSIDIARIES

	Fund	
	2016	2015
Unlisted shares, at cost	2,312	2,312
Loans to subsidiaries	118,802	96,019
<b>TOTAL</b>	<b>121,114</b>	<b>98,331</b>

The following is a list of the principal subsidiaries held directly by the Fund as at 31 December 2016:

Name of company	Place of incorporation and operation	Principal activities	Issued equity capital	Fund's interest in equity capital
The Hong Kong Mortgage Corporation Limited	Hong Kong	Investment in mortgages and loans, mortgage securitisation and guarantee	HK\$2,000,000,000	100%
Hong Kong Note Printing Limited	Hong Kong	Banknote printing	HK\$255,000,000	55%
Hong Kong FMI Services Limited	Hong Kong	Performance of financial market infrastructure related operations	HK\$167,000,000	100%
Debt Capital Solutions Company Limited	Hong Kong	Investment holding	HK\$1	100%
Drawbridge Investment Limited	Hong Kong	Investment holding	HK\$1	100%
Eight Finance Investment Company Limited	Hong Kong	Investment holding	HK\$1	100%
Stewardship Investment Company Limited	Hong Kong	Investment holding	HK\$1	100%
Stratosphere Finance Company Limited	Hong Kong	Investment holding	HK\$1	100%
Real Avenue Investment Company Limited	Hong Kong	Investment properties holding	HK\$1	100%
Real Boulevard Investment Company Limited	Hong Kong	Investment properties holding	HK\$1	100%
Real Gate Investment Company Limited	Hong Kong	Investment properties holding	HK\$1	100%
Real Horizon Investment Company Limited	Hong Kong	Investment properties holding	HK\$1	100%
Real Plaza Investment Company Limited	Hong Kong	Investment properties holding	HK\$1	100%
Real Summit Investment Company Limited	Hong Kong	Investment properties holding	HK\$1	100%

Loans to subsidiaries which principally hold investments including properties are unsecured, interest-free and repayable on demand.

The financial statements of these subsidiaries are audited by firms other than the Audit Commission. The aggregate net assets of these subsidiaries not audited by the Audit Commission amounted to 11.58% (2015: 9.09%) of the Group's net assets.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 17 INTERESTS IN ASSOCIATES AND JOINT VENTURES

	Group	
	2016	2015
<b>Associates<sup>1</sup></b>		
Share of net assets	8,208	670
<b>Joint ventures<sup>2</sup></b>		
Share of net assets	5,300	3,995
Due from joint ventures	18,575	16,523
	23,875	20,518
<b>TOTAL</b>	<b>32,083</b>	<b>21,188</b>

<sup>1</sup> Investment in an associate, comprising unlisted shares, is held directly by the Fund. In the Fund's balance sheet, the investment is stated at cost of HK\$5,000 (2015: HK\$5,000).

<sup>2</sup> The Fund does not directly hold investment in joint ventures.

The Group holds investments in four associates. One associate, incorporated in Hong Kong, provides interbank clearing services. The other three associates, incorporated outside Hong Kong, hold overseas investment properties. The Group holds equity interest in these associates ranging from 25% to 50%.

Aggregate information of the Group's associates, which are not individually material, is summarised below:

	Group	
	2016	2015
Share of profit/(loss) for the year	1,482	(18)
Share of other comprehensive loss	(75)	–
Share of total comprehensive income/(loss)	1,407	(18)
Aggregate carrying amount of interests in the associates	8,208	670

The Group's share of outstanding investment commitments to associates is shown below:

	Group	
	2016	2015
Commitments to contribute funds	1,689	3,962

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The Group holds investments in fourteen joint ventures, which are all incorporated outside Hong Kong. The principal activities of these joint ventures are the holding of overseas investment properties. At the end of 2016, the Group held equity interest in these joint ventures ranging from 48% to 99%. Although the Group's equity interest in some of these joint ventures exceeds 50%, they are categorised as joint ventures because important business decisions relating to these joint ventures are required to be made with the consent of all parties. At 31 December 2016, the aggregate interest in these joint ventures amounted to 0.64% (2015: 0.58%) of the Group's total assets.

Aggregate information of the Group's joint ventures, which are not individually material, is summarised below:

	Group	
	2016	2015
Share of profit for the year	1,527	1,995
Share of other comprehensive loss	(222)	(253)
Share of total comprehensive income	1,305	1,742
Aggregate carrying amount of interests in the joint ventures	23,875	20,518

The Group's share of outstanding investment commitments to joint ventures is shown below:

	Group	
	2016	2015
Commitments to contribute funds	1,400	1,698

## 18 INVESTMENT PROPERTIES

	Group		Fund	
	2016	2015	2016	2015
<b>At fair value</b>				
At 1 January	23,621	17,493	–	–
Additions	3,104	5,694	–	–
Change in fair value on revaluation	(805)	1,703	–	–
Exchange differences	(3,197)	(1,269)	–	–
At 31 December	22,723	23,621	–	–

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The carrying amount of the Group's investment properties is analysed as follows:

	Group		Fund	
	2016	2015	2016	2015
Held outside Hong Kong				
on freehold	11,279	9,291	–	–
on long-term lease (over 50 years)	11,444	14,330	–	–
<b>TOTAL</b>	<b>22,723</b>	23,621	–	–

The Group's investment properties are leased to third parties under operating leases. The gross rental income received and receivable by the Group and the related expenses in respect of these investment properties are summarised as follows:

	Group		Fund	
	2016	2015	2016	2015
Gross rental income	1,268	982	–	–
Direct expenses	(156)	(92)	–	–
Net rental income	1,112	890	–	–

The Group's total future minimum lease payments receivable under non-cancellable operating leases are as follows:

	Group		Fund	
	2016	2015	2016	2015
Within one year	1,058	1,156	–	–
After one year but not later than five years	3,938	4,394	–	–
After five years but not later than ten years	2,832	3,147	–	–
After ten years but not later than fifteen years	144	625	–	–
After fifteen years but not later than twenty years	6	8	–	–
<b>TOTAL</b>	<b>7,978</b>	9,330	–	–

At 31 December 2016, investment properties with a fair value of HK\$22,723 million (2015: HK\$23,621 million) were pledged to secure general banking facilities granted to the Group (note 26).

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 18.1 Fair value measurement of investment properties

The Group's investment properties are revalued by independent professional valuers on an open market value basis at the end of each financial year (except for 2015 in which the investment properties acquired in November 2015 were valued by management at a fair value of HK\$5,694 million based on the latest valuation made by independent professional valuers prior to acquisition). The valuers have valued the Group's investment properties based on income approach with reference to comparable market evidence. The market value which is considered as the fair value of each investment property reflects, among other things, rental income from current leases and assumptions about rental income from future leases in light of the current market conditions. The fair value also reflects, on a similar basis, any cash outflows that could be expected in respect of the property. For all properties, their current use equates to the highest and best use. There has been no change to the valuation technique during the year.

Under the income approach, fair value is estimated using assumptions regarding the benefits and liabilities of ownership over the asset's life including the terminal value. This method involves the projection of a series of cash flows on a real property interest. To this projected cash flow series, a market-derived discount rate is applied to establish the present value of the income stream associated with the asset. The significant unobservable inputs used in the income approach are the selection of discount rates which ranged from 4.94% to 6.05% (2015: 4.75% to 5.00%), net initial yields which ranged from 3.37% to 5.65% (2015: 4.50% to 5.16%) and terminal capitalisation rates which ranged from 3.20% to 5.81% (2015: 3.75% to 4.20%). Significant increases or decreases in any of those inputs in isolation would result in significantly lower or higher fair value measurements, respectively.

All of the Group's investment properties are classified under Level 3 of the fair value hierarchy. There were no transfers into or out of Level 3 during the year.

An analysis of the movement between opening and closing balances of Level 3 investment properties, measured at fair value using a valuation technique with significant unobservable inputs, is shown below:

	Group		Fund	
	2016	2015	2016	2015
At 1 January	23,621	17,493	–	–
Additions	3,104	5,694	–	–
Change in fair value on revaluation recognised as "income from investment properties" in the income and expenditure account	(805)	1,703	–	–
Exchange differences recognised in other comprehensive income	(3,197)	(1,269)	–	–
At 31 December	22,723	23,621	–	–
Net gains/(losses) recognised in the income and expenditure account held at the balance sheet date	(805)	1,703	–	–

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 19 PROPERTY, PLANT AND EQUIPMENT

(a)

	Group			Total
	Premises	Plant and equipment	Computer software licences and system development costs	
<b>Cost</b>				
At 1 January 2015	3,852	1,068	355	5,275
Additions	–	85	29	114
Disposals	–	(23)	–	(23)
At 31 December 2015	3,852	1,130	384	5,366
At 1 January 2016	<b>3,852</b>	<b>1,130</b>	<b>384</b>	<b>5,366</b>
Additions	–	<b>187</b>	<b>16</b>	<b>203</b>
Disposals	–	<b>(18)</b>	–	<b>(18)</b>
At 31 December 2016	<b>3,852</b>	<b>1,299</b>	<b>400</b>	<b>5,551</b>
<b>Accumulated depreciation</b>				
At 1 January 2015	984	732	278	1,994
Charge for the year	89	91	18	198
Written back on disposal	–	(18)	–	(18)
At 31 December 2015	1,073	805	296	2,174
At 1 January 2016	<b>1,073</b>	<b>805</b>	<b>296</b>	<b>2,174</b>
Charge for the year	<b>89</b>	<b>91</b>	<b>24</b>	<b>204</b>
Written back on disposal	–	<b>(18)</b>	–	<b>(18)</b>
At 31 December 2016	<b>1,162</b>	<b>878</b>	<b>320</b>	<b>2,360</b>
<b>Net book value</b>				
<b>At 31 December 2016</b>	<b>2,690</b>	<b>421</b>	<b>80</b>	<b>3,191</b>
At 31 December 2015	2,779	325	88	3,192

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund			Total
	Premises	Plant and equipment	Computer software licences and system development costs	
<b>Cost</b>				
At 1 January 2015	3,843	448	355	4,646
Additions	–	43	29	72
Disposals	–	(4)	–	(4)
At 31 December 2015	3,843	487	384	4,714
At 1 January 2016	<b>3,843</b>	<b>487</b>	<b>384</b>	<b>4,714</b>
Additions	–	<b>75</b>	<b>16</b>	<b>91</b>
Disposals	–	<b>(6)</b>	–	<b>(6)</b>
At 31 December 2016	<b>3,843</b>	<b>556</b>	<b>400</b>	<b>4,799</b>
<b>Accumulated depreciation</b>				
At 1 January 2015	979	301	278	1,558
Charge for the year	88	45	18	151
Written back on disposal	–	(4)	–	(4)
At 31 December 2015	1,067	342	296	1,705
At 1 January 2016	<b>1,067</b>	<b>342</b>	<b>296</b>	<b>1,705</b>
Charge for the year	<b>88</b>	<b>44</b>	<b>24</b>	<b>156</b>
Written back on disposal	–	<b>(6)</b>	–	<b>(6)</b>
At 31 December 2016	<b>1,155</b>	<b>380</b>	<b>320</b>	<b>1,855</b>
<b>Net book value</b>				
<b>At 31 December 2016</b>	<b>2,688</b>	<b>176</b>	<b>80</b>	<b>2,944</b>
At 31 December 2015	2,776	145	88	3,009

(b) The net book value of premises comprises:

	Group		Fund	
	2016	2015	2016	2015
In Hong Kong				
Leasehold land and the building situated thereon (leasehold between 10 and 50 years)	<b>2,668</b>	2,757	<b>2,666</b>	2,754
Outside Hong Kong				
Freehold land and the building situated thereon	<b>22</b>	22	<b>22</b>	22
<b>TOTAL</b>	<b>2,690</b>	2,779	<b>2,688</b>	2,776

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 20 CERTIFICATES OF INDEBTEDNESS, GOVERNMENT-ISSUED CURRENCY NOTES AND COINS IN CIRCULATION

	Group and Fund			
	Certificates of Indebtedness		Government-issued currency notes and coins in circulation	
	2016	2015	2016	2015
Carrying amount	405,345	357,863	11,928	11,335
<b>Reconciliation with face value:</b>				
Hong Kong dollar face value	407,795	360,165	12,000	11,408
Linked exchange rate for calculating the US dollars required for redemption	US\$1=HK\$7.80	US\$1=HK\$7.80	US\$1=HK\$7.80	US\$1=HK\$7.80
US dollars required for redemption	US\$52,281 million	US\$46,175 million	US\$1,538 million	US\$1,463 million
Market exchange rate for translation into Hong Kong dollars	US\$1=HK\$7.75315	US\$1=HK\$7.75015	US\$1=HK\$7.75315	US\$1=HK\$7.75015
Carrying amount	405,345	357,863	11,928	11,335

### 21 BALANCE OF THE BANKING SYSTEM

Under the interbank payment system based on Real Time Gross Settlement principles, all licensed banks maintain a Hong Kong dollar clearing account with the Hong Kong Monetary Authority (HKMA) for the account of the Fund. The aggregate amount in these clearing accounts, which must not have a negative balance, represents the total level of liquidity in the interbank market.

Under the weak-side Convertibility Undertaking, the HKMA undertakes to convert Hong Kong dollars in these clearing accounts into US dollars at the fixed exchange rate of US\$1=HK\$7.85. Likewise, under the strong-side Convertibility Undertaking, licensed banks can convert US dollars into Hong Kong dollars in these accounts, as the HKMA undertakes to buy US dollars at the fixed exchange rate of US\$1=HK\$7.75. Within the Convertibility Zone bounded by the two Convertibility Undertakings, the HKMA may choose to conduct market operations in a manner consistent with Currency Board principles. Such operations can result in matching changes in the balances of these accounts.

The balance of the banking system is repayable on demand, non-interest-bearing and is shown at its Hong Kong dollar amount.



## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 22 PLACEMENTS BY BANKS AND OTHER FINANCIAL INSTITUTIONS

	Group and Fund	
	2016	2015
At amortised cost		
Placements by central banks	56,136	60,664
Placements by banks	–	6,243
<b>TOTAL</b>	<b>56,136</b>	<b>66,907</b>

### 23 PLACEMENTS BY FISCAL RESERVES

	Group and Fund	
	2016	2015
<b>Placements by Operating and Capital Reserves</b>		
<b>(i) with interest payable at a fixed rate determined annually</b>		
General Revenue Account	542,138	496,365
Land Fund	–	219,730
Capital Works Reserve Fund	78,534	64,105
Civil Service Pension Reserve Fund	31,899	27,129
Disaster Relief Fund	28	17
Innovation and Technology Fund	8,317	184
Lotteries Fund	22,792	22,026
Capital Investment Fund	2,042	1,864
Loan Fund	4,309	2,124
	<b>690,059</b>	<b>833,544</b>
<b>(ii) with interest payable at market-based rates</b>		
General Revenue Account	9	4
	<b>690,068</b>	<b>833,548</b>
<b>Placements by Future Fund with interest payable at a composite rate determined annually</b>		
Land Fund	219,730	–
General Revenue Account	4,800	–
	<b>224,530</b>	<b>–</b>
<b>TOTAL</b>	<b>914,598</b>	<b>833,548</b>

Fiscal Reserves comprise Operating and Capital Reserves and the Future Fund.

Placements by Operating and Capital Reserves are repayable on demand. Interest on the majority of these placements is payable at a fixed rate determined every January. The rate is the average annual investment return of the Fund's Investment Portfolio for the past six years or the average annual yield of three-year Government Bond (2015: three-year Exchange Fund Notes) for the previous year subject to a minimum of zero percent, whichever is the higher. This rate was fixed at 3.3% per annum for 2016 (2015: 5.5%).

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The Future Fund was established on 1 January 2016. Placements by Future Fund comprise an initial endowment from the balance of the Land Fund and periodic top-ups from the General Revenue Account as directed by the Financial Secretary. These placements are divided into two portions: one linked with the performance of the Investment Portfolio and another linked with the performance of the Long-Term Growth Portfolio. Interest on these placements is payable at a composite rate which is computed annually, on a weighted average basis, with reference to the above-mentioned fixed rate determined for placements by Operating and Capital Reserves and the annual rate of return linked with the performance of the Long-Term Growth Portfolio. The composite rate for 2016 was 4.5%. Placements by Future Fund, together with the interest thereon (note 28), are repayable on 31 December 2025 unless otherwise directed by the Financial Secretary according to the terms of the placements.

### 24 PLACEMENTS BY HONG KONG SPECIAL ADMINISTRATIVE REGION GOVERNMENT FUNDS AND STATUTORY BODIES

	Group and Fund	
	2016	2015
<b>Placements with interest payable at a fixed rate<sup>1</sup> determined annually</b>		
Bond Fund	132,644	127,501
Community Care Fund	17,995	17,420
Elite Athletes Development Fund	6,604	6,761
Employees Retraining Board	14,039	13,591
Environment and Conservation Fund	5,418	5,245
Hospital Authority	18,319	7,903
Housing Authority	41,329	40,008
Language Fund	5,603	5,424
Research Endowment Fund	26,319	26,351
Samaritan Fund	7,172	6,943
Trading Funds	8,143	7,883
West Kowloon Cultural District Authority	12,099	15,751
Other funds <sup>2</sup>	3,719	–
	<b>299,403</b>	<b>280,781</b>
<b>Placements with interest payable at market-based rates</b>		
Deposit Protection Scheme Fund	3,082	65
<b>TOTAL</b>	<b>302,485</b>	<b>280,846</b>

<sup>1</sup> The rate is the average annual investment return of the Fund's Investment Portfolio for the past six years or the average annual yield of three-year Government Bond (2015: three-year Exchange Fund Notes) for the previous year subject to a minimum of zero percent, whichever is the higher. This rate was fixed at 3.3% per annum for 2016 (2015: 5.5%).

<sup>2</sup> This is a collective placement by 11 HKSAR Government funds.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 25 EXCHANGE FUND BILLS AND NOTES ISSUED

	Group and Fund	
	2016	2015
At fair value		
<b>Exchange Fund Bills and Notes issued</b>		
Exchange Fund Bills	913,811	769,784
Exchange Fund Notes	48,768	60,007
	962,579	829,791
<b>Exchange Fund Bills held</b>	(1,597)	(1,999)
<b>TOTAL</b>	<b>960,982</b>	<b>827,792</b>

EFBN issued are unsecured obligations of the Fund and are one of the components of the Monetary Base in the Currency Board Account. Exchange Fund Bills are issued by the Fund for maturities not exceeding one year. Exchange Fund Notes are issued by the Fund with 2-year, 3-year, 5-year, 7-year, 10-year and 15-year maturities. EFBN issued are valued at offer prices derived from the "HKMA EFBN Closing Reference" adjusted by observed market spreads.

Since January 2015, the Fund has ceased to issue Exchange Fund Notes with tenors of three years or above to avoid overlapping with Government Bonds of the same tenors. To maintain the overall size of Exchange Fund paper, the Fund has issued additional Exchange Fund Bills to replace maturing Exchange Fund Notes of those tenors.

Exchange Fund Bills held by the Fund as a result of market making activities are considered as redemption of the bills issued and are derecognised.

An analysis of the nominal value of EFBN issued at the beginning and the end of year is set out below:

	Group and Fund			
	2016		2015	
	Exchange Fund Bills	Exchange Fund Notes	Exchange Fund Bills	Exchange Fund Notes
Issued by Currency Board Operations segment				
Nominal value at 1 January	769,821	58,600	683,930	68,700
Issuance	2,724,292	4,800	2,237,406	4,800
Redemption	(2,579,215)	(15,200)	(2,151,515)	(14,900)
Nominal value at 31 December	914,898	48,200	769,821	58,600
Long positions held by Financial Stability and Other Activities segment				
Nominal value at 31 December	(1,600)	–	(2,000)	–
Total nominal value	913,298	48,200	767,821	58,600
Carrying amount, at fair value	912,214	48,768	767,785	60,007
Difference	1,084	(568)	36	(1,407)

The fair value changes of EFBN issued are attributable to changes in benchmark interest rates.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 26 BANK LOANS

	Group		Fund	
	2016	2015	2016	2015
At amortised cost				
Bank loans repayable:				
Within one year	–	76	–	–
After one year but not later than two years	–	3,728	–	–
After two years but not later than five years	9,117	4,408	–	–
After five years but not later than ten years	2,607	–	–	–
More than ten years	–	3,106	–	–
<b>TOTAL</b>	<b>11,724</b>	<b>11,318</b>	<b>–</b>	<b>–</b>

At 31 December 2016, the banking facilities of the Group were secured by mortgage over the investment properties with a fair value of HK\$22,723 million (2015: HK\$23,621 million) (note 18).

### 27 OTHER DEBT SECURITIES ISSUED

	Group		Fund	
	2016	2015	2016	2015
Debt securities issued, carried at amortised cost	9,098	5,682	–	–
Debt securities issued, designated as hedged items under fair value hedge	24,998	27,438	–	–
Debt securities issued, designated at fair value	137	343	–	–
<b>TOTAL</b>	<b>34,233</b>	<b>33,463</b>	<b>–</b>	<b>–</b>

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

An analysis of the nominal value of other debt securities issued at the beginning and the end of year is set out below:

	Group		Fund	
	2016	2015	2016	2015
Total debt securities issued				
Nominal value at 1 January	34,938	34,415	–	–
Issuance	24,531	23,047	–	–
Redemption	(23,686)	(22,527)	–	–
Foreign currency translation differences	–	3	–	–
Nominal value at 31 December	35,783	34,938	–	–
Carrying amount	34,233	33,463	–	–
Difference	1,550	1,475	–	–
Debt securities issued, designated at fair value				
Nominal value	184	389	–	–
Carrying amount, at fair value	137	343	–	–
Difference	47	46	–	–

The fair value changes of debt securities issued designated at fair value are attributable to changes in benchmark interest rates.

## 28 OTHER LIABILITIES

	Group		Fund	
	2016	2015	2016	2015
Unsettled purchases of securities	72,706	32,275	72,658	32,275
Accrued interest on placements by Fiscal Reserves (Operating and Capital Reserves) being earmarked as Housing Reserve <sup>1</sup>	76,608	74,154	76,608	74,154
Accrued interest on placements by Fiscal Reserves (Future Fund) <sup>2</sup>	10,071	–	10,071	–
Accrued charges and other liabilities	7,546	7,238	735	705
Other interest payable	387	362	125	145
Tax payable	93	139	–	–
Deferred tax liabilities	111	115	–	–
<b>TOTAL</b>	<b>167,522</b>	<b>114,283</b>	<b>160,197</b>	<b>107,279</b>

<sup>1</sup> In accordance with the directives made by the Financial Secretary in December 2014 and December 2015, the accrued interest on placements by Fiscal Reserves earned for 2014 and 2015 with a total of HK\$72,642 million were not paid on 31 December of the respective years but were earmarked as Housing Reserve which may be made available for appropriation under the Public Finance Ordinance (Cap. 2) for the purpose of financing the development of public housing and public housing-related projects and infrastructure. The sum earmarked as Housing Reserve earns interest at the fixed rate (note 23) and shall be paid to the fund accounts of the Fiscal Reserves on a date determined by the Financial Secretary. The interest accrued on the Housing Reserve for 2016 was HK\$2,454 million (2015: HK\$1,512 million).

<sup>2</sup> In accordance with the directive made by the Financial Secretary in December 2015, the accrued interest on placements by Future Fund should be rolled over and compounded at the composite rate (note 23) on an annual basis and shall only be paid upon maturity of the placements (i.e. 31 December 2025) unless otherwise directed by the Financial Secretary according to the terms of the placements.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 29 ANALYSIS OF CASH AND CASH EQUIVALENTS IN THE STATEMENT OF CASH FLOWS

	Group		Fund	
	2016	2015	2016	2015
Cash and money at call	207,587	188,547	206,954	187,835
Placements with banks and other financial institutions	182,747	106,734	176,538	98,795
Treasury bills and commercial paper	71,616	79,475	71,616	79,475
<b>TOTAL</b>	<b>461,950</b>	<b>374,756</b>	<b>455,108</b>	<b>366,105</b>

#### Reconciliation with the balance sheet

	Note	Group		Fund	
		2016	2015	2016	2015
Amounts shown in the balance sheet					
Cash and money at call	7	207,587	188,547	206,954	187,835
Placements with banks and other financial institutions	8	203,704	123,880	179,712	102,681
Treasury bills and commercial paper	9	984,486	958,005	984,486	958,005
		1,395,777	1,270,432	1,371,152	1,248,521
Less: Amounts with original maturity beyond 3 months		(933,827)	(895,676)	(916,044)	(882,416)
Cash and cash equivalents in the statement of cash flows		461,950	374,756	455,108	366,105

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 30 OPERATING SEGMENT INFORMATION

The Group determines its operating segments based on the reports reviewed by the chief operating decision maker. As a central banking institution, the HKMA is responsible for managing the Exchange Fund and maintaining the monetary and banking stability of Hong Kong. The Group comprises operating segments as stated in note 2.19.

	Group							
	Currency Board Operations (note (a))		Reserves Management		Financial Stability and Other Activities		Total	
	2016	2015	2016	2015	2016	2015	2016	2015
<b>Income</b>								
Interest and dividend income	10,531	5,056	27,043	25,822	1,530	1,398	39,104	32,276
Investment gains/(losses)	1,093	(1,068)	25,369	(38,056)	(2,765)	(2,261)	23,697	(41,385)
Other income	–	–	345	42	592	692	937	734
	11,624	3,988	52,757	(12,192)	(643)	(171)	63,738	(8,375)
<b>Expenditure</b>								
Interest expense	2,161	698	43,162	61,907	339	272	45,662	62,877
Other expenses	1,124	1,063	1,412	1,463	2,388	2,331	4,924	4,857
	3,285	1,761	44,574	63,370	2,727	2,603	50,586	67,734
<b>Surplus/(Deficit) before share of profit of associates and joint ventures</b>	8,339	2,227	8,183	(75,562)	(3,370)	(2,774)	13,152	(76,109)
Share of profit of associates and joint ventures, net of tax	–	–	2,991	1,958	18	19	3,009	1,977
<b>Surplus/(Deficit) before taxation</b>	8,339	2,227	11,174	(73,604)	(3,352)	(2,755)	16,161	(74,132)

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group									
	Currency Board Operations (note (a))		Reserves Management		Financial Stability and Other Activities		Re-allocation (note (b) & (c))		Total	
	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015
<b>Assets</b>										
Backing Assets										
Investment in designated US dollar assets	1,759,179	1,695,018	–	–	–	–	–	–	1,759,179	1,695,018
Interest receivable on designated US dollar assets	1,658	1,310	–	–	–	–	–	–	1,658	1,310
Net accounts receivable/(payable)	(8,931)	(3,872)	–	–	–	–	18,984	3,872	10,053	–
Other investments	–	–	1,685,554	1,646,893	233,232	159,527	(1,597)	(1,999)	1,917,189	1,804,421
Other assets	–	–	51,013	23,261	5,939	6,144	464	1,155	57,416	30,560
<b>TOTAL ASSETS</b>	<b>1,751,906</b>	<b>1,692,456</b>	<b>1,736,567</b>	<b>1,670,154</b>	<b>239,171</b>	<b>165,671</b>	<b>17,851</b>	<b>3,028</b>	<b>3,745,495</b>	<b>3,531,309</b>
<b>Liabilities</b>										
Monetary Base										
Certificates of Indebtedness	405,345	357,863	–	–	–	–	–	–	405,345	357,863
Government-issued currency notes and coins in circulation	11,928	11,335	–	–	–	–	–	–	11,928	11,335
Balance of the banking system	259,593	391,343	–	–	–	–	–	–	259,593	391,343
Exchange Fund Bills and Notes issued	962,579	829,791	–	–	–	–	(1,597)	(1,999)	960,982	827,792
Interest payable on Exchange Fund Notes	125	145	–	–	–	–	–	–	125	145
Net accounts (receivable)/payable	(232)	(1,128)	–	–	–	–	464	1,155	232	27
Other debt securities issued	–	–	–	–	34,233	33,463	–	–	34,233	33,463
Placements by banks and other financial institutions	–	–	–	6,243	56,136	60,664	–	–	56,136	66,907
Bank loans	–	–	11,724	11,318	–	–	–	–	11,724	11,318
Placements by Fiscal Reserves	–	–	914,598	833,548	–	–	–	–	914,598	833,548
Placements by HKSAR Government funds and statutory bodies	–	–	299,403	280,781	3,082	65	–	–	302,485	280,846
Other liabilities	–	–	142,436	105,294	8,603	8,201	18,984	3,872	170,023	117,367
<b>TOTAL LIABILITIES</b>	<b>1,639,338</b>	<b>1,589,349</b>	<b>1,368,161</b>	<b>1,237,184</b>	<b>102,054</b>	<b>102,393</b>	<b>17,851</b>	<b>3,028</b>	<b>3,127,404</b>	<b>2,931,954</b>



## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

### (a) Currency Board Operations

Starting from 1 October 1998, specific US dollar assets of the Fund have been designated to back the Monetary Base, which comprises Certificates of Indebtedness, government-issued currency notes and coins in circulation, the balance of the banking system and EFBN issued. While specific assets of the Fund have been earmarked for backing the Monetary Base, all the Fund's assets are available for the purpose of supporting the Hong Kong dollar exchange rate under the Linked Exchange Rate system.

In accordance with an arrangement approved by the Financial Secretary in January 2000, assets can be transferred between the Backing Portfolio and general reserves when the Backing Ratio reaches either the upper trigger point (112.5%) or the lower trigger point (105%). This arrangement allows transfer of excess assets out of the Backing Portfolio to maximise their earning potential while ensuring that there are sufficient liquid assets in the Backing Portfolio. The Backing Ratio stood at 106.7% as at 31 December 2016 (2015: 106.33%).

### (b) Re-allocation of assets and liabilities

For the purpose of the Currency Board Operations segment, certain liabilities of the Fund are deducted from the Backing Assets and certain assets are deducted from the Monetary Base in order to allow proper computation of the Backing Ratio. This re-allocation adjustment adds back these items in order to reconcile the segmental information to the Group balance sheet.

The Backing Assets are presented on a net basis in the Currency Board Operations. Accounts payable for unsettled purchases of securities are included in "net accounts payable" to offset corresponding investments in the Backing Assets. As at 31 December 2016, deductions from the Backing Assets comprised "other liabilities" of HK\$18,984 million (2015: HK\$3,872 million).

The Monetary Base is also presented on a net basis. As Hong Kong dollar interest rate swaps have been used as a means to manage the cost of issuing Exchange Fund Notes, interest receivable of HK\$20 million (2015: HK\$30 million) and unrealised gains of HK\$444 million (2015: HK\$1,125 million) on these interest rate swaps are included in "net accounts (receivable)/payable" to reduce the Monetary Base. As at 31 December 2016, deductions from the Monetary Base comprised "other assets" of HK\$464 million (2015: HK\$1,155 million).

### (c) Exchange Fund Bills and Notes held

EFBN held by the Financial Stability and Other Activities segment are treated as redemption of EFBN issued in the Currency Board Operations segment.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 31 PLEDGED ASSETS

Assets are pledged as margin for futures contracts and securities lending agreements and as collateral for securing general banking facilities. Securities lent do not include EFBN in issue. There are no financial assets pledged against contingent liabilities.

		Group		Fund	
	Note	2016	2015	2016	2015
Secured liabilities					
Bond futures contracts, at fair value	11(a)	62	38	62	38
Commodity futures contracts, at fair value	11(a)	14	–	14	–
Interest rate futures contracts, at fair value	11(a)	–	1	–	1
Interest rate swap contracts, at fair value		10	5	10	5
Bank loans	26	11,724	11,318	–	–
Assets pledged					
Cash and money at call		77	307	77	307
Financial assets designated at fair value		4,842	7,550	4,842	7,550
Investment properties	18	22,723	23,621	–	–

During the year, the Group entered into collateralised reverse repurchase agreements, repurchase agreements and securities lending transactions that may result in credit exposure in the event that the counterparty to the transaction is unable to fulfil its contractual obligations. The Group controls credit risk associated with these activities by monitoring counterparty credit exposure and collateral values on a daily basis and requiring additional collateral to be deposited with or returned to the Group when deemed necessary.

These transactions are conducted under terms that are usual and customary to standard lending, and securities borrowing and lending activities.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 32 COMMITMENTS

#### (a) Capital commitments

Capital expenditure authorised but not provided for in the financial statements at the balance sheet date was as follows:

	Group		Fund	
	2016	2015	2016	2015
Contracted for	16	16	6	–
Authorised but not yet contracted for	380	343	359	242
	<b>396</b>	359	<b>365</b>	242

#### (b) Credit facility to the International Monetary Fund

The Fund has participated in the New Arrangements to Borrow (NAB), a standby credit facility provided to the International Monetary Fund (IMF) for the purpose of managing instability in the international monetary system. The facility is subject to periodic review and renewal. As at 31 December 2016, the Fund had an undertaking under the NAB to lend foreign currencies to the IMF up to HK\$3,545 million equivalent (2015: HK\$3,651 million equivalent), in the form of a loan bearing prevailing market interest rates. The outstanding principal due from the IMF under the NAB amounted to HK\$540 million equivalent with a repayment term of five years (2015: HK\$355 million equivalent).

#### (c) Credit facility to the Hong Kong Deposit Protection Board

The Fund has provided the Hong Kong Deposit Protection Board (HKDPB) with a standby credit facility of HK\$120 billion (2015: HK\$120 billion) at prevailing market interest rates for meeting the necessary liquidity required for payment of compensation in the event of a bank failure. As at 31 December 2016, there was no outstanding balance due from the HKDPB under this facility (2015: Nil).

#### (d) Credit facility to The Hong Kong Mortgage Corporation Limited

The Fund has provided the HKMC with a revolving credit facility of HK\$30 billion (2015: HK\$30 billion) at prevailing market interest rates. As at 31 December 2016, there was no outstanding balance due from the HKMC under this facility (2015: Nil).

#### (e) Repurchase agreements with other central banks

The Fund has entered into bilateral repurchase agreements with various central banks in Asia and Australasia amounting up to HK\$44,581 million equivalent (2015: HK\$44,563 million equivalent). The arrangement allows each organisation to enhance the liquidity of its foreign reserve portfolio with minimal additional risk. As at 31 December 2016, there was no outstanding transaction with any central bank under this arrangement (2015: Nil).

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### (f) Chiang Mai Initiative Multilateralisation Agreement

The Chiang Mai Initiative Multilateralisation (CMIM) was established under the aegis of the 10 Association of Southeast Asian Nations (ASEAN) member countries together with China, Japan and Korea (ASEAN+3) to provide short-term US dollars through currency swap transactions to participants facing balance-of-payments and liquidity difficulties with a total size of US\$240 billion (2015: US\$240 billion). Hong Kong, through the HKMA, participates in the CMIM and has undertaken to commit up to US\$8.4 billion (2015: US\$8.4 billion) out of the Fund. Hong Kong has the right to request liquidity support up to US\$6.3 billion (2015: US\$6.3 billion) from the CMIM in case of emergency. Up to 31 December 2016, there had been no request to activate the CMIM (2015: Nil).

### (g) Bilateral swap agreement

The People's Bank of China and the HKMA renewed a bilateral swap agreement in November 2014 for another three years, with a size of RMB400 billion/HK\$505 billion. This currency swap agreement helps facilitate the development of offshore renminbi business in Hong Kong. The bilateral swap outstanding as at 31 December 2016 was RMB56.0 billion (2015: RMB55.6 billion).

### (h) Investment commitments

The Group's subsidiaries with principal activities of holding investments, including properties, had outstanding investment commitment of HK\$133,792 million equivalent as at 31 December 2016 (2015: HK\$122,405 million equivalent).

### (i) Lease commitments

As at 31 December 2016, the total future minimum lease payments payable under non-cancellable operating leases of premises were as follows:

	Group		Fund	
	2016	2015	2016	2015
Within one year	97	94	66	61
After one year but not later than five years	185	87	184	57
<b>TOTAL</b>	<b>282</b>	181	<b>250</b>	118

### (j) Financial Dispute Resolution Centre Limited

The HKMA signed a Memorandum of Understanding together with the Financial Services and the Treasury Bureau and the Securities and Futures Commission on 21 December 2011 regarding the funding arrangement on the set-up and operating costs of the Financial Dispute Resolution Centre Limited (FDRCL). During the year, the Fund contributed HK\$3.5 million to FDRCL (2015: HK\$7.0 million). The outstanding commitment of the Fund to contribute to FDRCL as at 31 December 2016 was HK\$10.5 million (2015: HK\$14.0 million).

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

### 33 CONTINGENT LIABILITIES

#### (a) Uncalled portion of investment in the Bank for International Settlements

As at 31 December 2016, the Fund had a contingent liability of up to 16.1 million Special Drawing Rights (SDRs) or HK\$168 million equivalent (2015: 16.1 million SDRs or HK\$173 million equivalent), in respect of the uncalled portion of its 4,285 shares (2015: 4,285 shares) in the Bank for International Settlements (note 10).

SDR is an international reserve asset created by the International Monetary Fund. Its value is based on a basket of five major currencies comprising US dollar, euro, renminbi, Japanese yen and pound sterling. As at 31 December 2016, SDR 1 was valued at US\$1.34472 (2015: US\$1.38573).

#### (b) Financial guarantees

The Group has provided guarantees in respect of bank loans granted to joint ventures. The maximum liability as at 31 December 2016 was HK\$875 million equivalent (2015: HK\$687 million equivalent).

### 34 MATERIAL RELATED PARTY TRANSACTIONS

Transactions with related parties are conducted at rates determined by the Monetary Authority taking into account the nature of each transaction on a case-by-case basis.

In addition to the transactions and balances disclosed elsewhere in these financial statements, during the year, the Group, through the HKMC, purchased HK\$170 million (2015: HK\$209 million) of mortgage loans from the HKSAR Government.

The Exchange Fund Advisory Committee (EFAC) through its Sub-Committees advises the Financial Secretary in his control of the Fund. Members of the EFAC and its Sub-Committees are appointed in a personal capacity by the Financial Secretary for the expertise and experience that they can bring to the Committees. Transactions with companies related to members of the EFAC and its Sub-Committees, if any, have been conducted as a normal part of the operation of the Group and on terms consistent with its ongoing operations.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 35 FINANCIAL RISK MANAGEMENT

This note presents information about the nature and extent of risks to which the Group is exposed, in particular those arising from financial instruments, and the risk management framework of the Group. The principal financial risks the Group is exposed to are credit risk, market risk and liquidity risk.

#### 35.1 Governance

The Financial Secretary is advised by the EFAC in his control of the Fund. The EFAC is established under section 3(1) of the Exchange Fund Ordinance, which requires the Financial Secretary to consult the Committee in his exercise of control of the Fund. Members of the EFAC are appointed in a personal capacity by the Financial Secretary under the delegated authority of the Chief Executive of the HKSAR for the expertise and experience that they can bring to the Committee. Such expertise and experience include knowledge of monetary, financial and economic affairs and of investment issues, as well as of accounting, management, business and legal matters.

The EFAC is assisted in its work by five Sub-Committees, which monitor specific areas of the HKMA's work and report and make recommendations to the Financial Secretary through the EFAC.

Among these Sub-Committees, the Investment Sub-Committee (ISC) monitors the HKMA's investment management activities and makes recommendations on the investment policy and strategy of the Fund and on risk management and other related matters. Operating within the policies and guidelines endorsed by the EFAC or its delegated authority, the Reserves Management Department of the HKMA conducts the day-to-day investment management of the Fund while the Risk and Compliance Department, which is independent of the Reserves Management Department, carries out the risk management activities of the Fund.

#### 35.2 Investment management and control

Investment activities of the Fund are conducted in accordance with the investment benchmark derived from the Fund's investment objectives. The investment benchmark directs the strategic asset allocation of the Fund and is reviewed on a regular basis to ensure that it consistently meets the investment objectives. Changes to the investment benchmark, if required, must be endorsed by the EFAC.

The Fund's target asset and currency mix were as follows:

	2016	2015
<b>Asset type</b>		
Bonds	71%	72%
Equities and related investments	29%	28%
	100%	100%
<b>Currency<sup>1</sup></b>		
US dollar and Hong Kong dollar	91%	81%
Others <sup>2</sup>	9%	19%
	100%	100%

<sup>1</sup> The target currency mix in 2016 has taken into account the impact of a measure approved by the EFAC to reduce the non-US dollar/Hong Kong dollar holdings of the Exchange Fund during the year.

<sup>2</sup> Other currencies included mainly euro, renminbi, pound sterling and Japanese yen.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

In addition to the investment benchmark, the EFAC determines the tactical deviation limits governing the extent to which the Fund's asset and currency mix may deviate from the investment benchmark. The tactical deviation limits are used to guide the medium term investments of the Fund. The tactical deviation limits are derived from a risk-based approach, taking into account the risk tolerance level set by the EFAC and risk contributions of the asset classes and markets that the Fund is allowed to invest in. These risk contributions reflect the neutral allocations of asset markets within the investment benchmark, and the volatility of and correlation across asset markets. Authority to take medium term investment decisions is delegated to senior management of the HKMA down to the Executive Director level.

The Risk and Compliance Department is responsible for risk management and compliance monitoring regarding the investments of the Fund. It monitors the risk exposure of the Fund, checks compliance of investment activities against established guidelines and reports and follows up any identified breaches.

### 35.3 Credit risk

Credit risk is the risk of financial loss when a counterparty or a borrower fails to meet its contractual obligations. The Group's credit risk arises principally from the investments of the Fund and the loan portfolio of the HKMC.

#### 35.3.1 Management of credit risk

The HKMA maintains effective credit risk management over the investments of the Fund. Based on the delegated authority of the EFAC, the Credit, Rules and Compliance Committee (CRCC), which was retitled from the previous Credit Review and Compliance Committee, was established within the HKMA with the following responsibilities: (i) to establish and maintain the Credit Exposure Policy to govern the investments of the Fund; (ii) to review the adequacy of the existing credit risk management practices and, where necessary, formulate proposals for amendments; (iii) to conduct analysis of credit risk issues; (iv) to establish and review credit limits for the approved issuers and counterparties; (v) to review and consider proposals of amendments to the Operational Rules for Exchange Fund Investments as appropriate, and make recommendations to the Monetary Authority for endorsement; and (vi) to monitor the compliance of the investments of the Fund with the established policies and limits, and report and follow up any identified breaches. The CRCC is chaired by the Deputy Chief Executive (Monetary) whose responsibilities are independent of the day-to-day investment activities of the Fund, and includes representatives from the Reserves Management Department, the Monetary Management Department, the Research Department and the Risk and Compliance Department of the HKMA.

In light of the rapidly evolving risk environment, the HKMA will remain vigilant in monitoring and managing the Fund's credit risk exposure, and will sustain the impetus for better credit risk management practices to support the investment activities of the Fund.

Credit limits are established in accordance with in-house methodologies as set out in the Operational Rules for Exchange Fund Investments and the Credit Exposure Policy to limit exposures to counterparty, issuer and country risks arising from the investments of the Fund.

#### (a) Counterparty risk

The Fund selects its counterparties in lending, placement, derivatives and trading transactions prudently and objectively. Since the Fund conducts transactions with a counterparty for a range of financial instruments, credit limits are established to limit the overall exposure to each authorised counterparty based on its credit ratings, financial strength and other relevant information.

Counterparty credit exposures are measured according to the risk nature of financial products involved in the transaction. Counterparty credit exposures of derivatives include an estimate for the potential future credit exposure of the derivative contracts, in addition to their positive mark-to-market replacement value.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### (b) Issuer risk

Issuer risk arises from investments in debt securities. Credit limits for approved issuers are set on both individual and group levels to control the risk of loss arising from the default of debt securities issuers and to prevent undue risk concentration.

Moreover, to be qualified as an approved investment, a new market or financial instrument must meet the minimum credit, security and liquidity requirements of the Fund.

### (c) Country risk

Country risk is broadly defined to include both the sovereign risk and the transfer risk. Sovereign risk denotes a government's ability and willingness to repay its obligations. Transfer risk is the risk that a borrower may not be able to secure foreign exchange to service its external obligations, for example, due to an action by the government to impose restrictions on the transfer of funds from the debtors in the country to foreign creditors. Under the existing framework, country limits are established to control the Fund's overall credit risk exposures to the countries endorsed by the CRCC.

The above credit limits are reviewed regularly. Credit exposure is monitored against these limits on a daily basis. To ensure prompt identification, proper approval and consistent monitoring of credit risk, the Fund has implemented a unified automated credit monitoring system which provides fully-integrated straight-through-processing linking the front, middle and back office functions. The pre-deal checking takes place in the front office prior to the commitment of any transaction to ensure that the intended transaction will not exceed the credit limits. The end-of-day compliance checking further verifies that the Fund complies with the established credit policies and procedures.

Any breaches of credit limits are reported to the CRCC and the ISC, and are followed up by the Risk and Compliance Department in a timely manner. The approval authorities to sanction these breaches are set out in the Credit Exposure Policy.

To manage the exposure to credit risk arising from the loan portfolio and mortgage insurance business, a four-pronged approach is established for (i) selecting Approved Sellers carefully, (ii) adopting prudent mortgage purchasing criteria and insurance eligibility criteria, (iii) conducting effective due diligence reviews and (iv) ensuring adequate protection for higher-risk mortgages.

### 35.3.2 Exposure to credit risk

The maximum exposure to credit risk of the financial assets of the Group and the Fund are equal to their carrying amounts. The maximum exposures to credit risk of off-balance sheet exposures are as follows:

	Note	Group		Fund	
		2016	2015	2016	2015
Risk in force – mortgage insurance	35.6	16,840	13,409	–	–
Risk in force – other guarantees and insurance	35.6	4,333	2,996	–	–
Loan commitments, guarantees and other credit related commitments		367,389	356,067	262,722	262,975
<b>TOTAL</b>		<b>388,562</b>	<b>372,472</b>	<b>262,722</b>	<b>262,975</b>



## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 35.3.3 Credit quality

The Group predominantly invests in liquid Organisation for Economic Co-operation and Development (OECD) government bonds and other quasi-government debt securities issues. As at 31 December 2016, approximately 85% (2015: 85%) of the debt securities held by the Group were rated “double-A” or above by both Moody’s and Standard & Poor’s. The credit quality of major financial assets is analysed below:

	Group		Fund	
	2016	2015	2016	2015
<b>Cash and money at call, placements with banks and other financial institutions, by credit rating<sup>1</sup></b>				
AAA	–	259	–	259
AA- to AA+	82,563	61,345	76,651	60,108
A- to A+	242,121	163,817	224,092	144,871
Lower than A- or un-rated <sup>2</sup>	86,607	87,006	85,923	85,278
	411,291	312,427	386,666	290,516
<b>Debt securities, by credit rating<sup>1</sup></b>				
AAA	549,413	445,772	547,907	444,554
AA- to AA+	1,575,837	1,666,126	1,566,106	1,656,063
A- to A+	160,911	127,737	157,619	124,445
Lower than A- or un-rated <sup>2</sup>	208,665	249,657	194,521	236,937
	2,494,826	2,489,292	2,466,153	2,461,999
<b>Loan portfolio</b>				
Neither past due nor impaired (note (a))	9,303	11,191	–	–
Past due but not impaired (note (b))	231	311	–	–
Impaired (note (c))	1	1	–	–
Allowance for loan impairment	(1)	(1)	–	–
	9,534	11,502	–	–
<b>TOTAL</b>	<b>2,915,651</b>	<b>2,813,221</b>	<b>2,852,819</b>	<b>2,752,515</b>

<sup>1</sup> This is the lower of ratings designated by Moody’s and Standard & Poor’s.

<sup>2</sup> These included mainly balances with central banks and debt securities issued by the Bank for International Settlements which are not rated.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### (a) Loans that are neither past due nor impaired

An internal rating system is used for assessing the credit quality of the loan portfolio. Grades 1 to 3 include loans with either insignificant credit risk or no recent past due history and with different levels of credit enhancements in addition to the collateral. Grade 4 includes loans with recent past due history and with credit enhancements in addition to collateral. Grade 5 includes loans with recent past due history and with collateral only. The credit quality of loans that were neither past due nor impaired at the balance sheet date is analysed below:

	Group		Fund	
	2016	2015	2016	2015
Grades				
1 to 3	9,294	11,170	–	–
4	–	1	–	–
5	9	20	–	–
<b>TOTAL</b>	<b>9,303</b>	<b>11,191</b>	<b>–</b>	<b>–</b>

### (b) Loans that are past due but not impaired

These are loans where contractual interest or principal payments are past due but the Group believes that recognising an impairment loss is not appropriate on the basis of the level of collateral held. The loans that were past due but not impaired at the balance sheet date are analysed below:

	Group		Fund	
	2016	2015	2016	2015
Loans that were past due				
90 days or less	229	310	–	–
91 to 180 days	–	–	–	–
over 180 days	2	1	–	–
<b>TOTAL</b>	<b>231</b>	<b>311</b>	<b>–</b>	<b>–</b>
Of which fair value of collateral	2,348	3,110	–	–

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### (c) Impaired loans

These are loans where the Group determines on an individual basis that it is probable that it will be unable to collect all principal and interest due according to the contractual terms of the loan agreements. As at 31 December 2016, individually impaired loans of the Group before taking into account the cash flows from collateral held amounted to HK\$1 million (2015: HK\$1 million). There was no collateral held against these impaired loans (2015: Nil).

### (d) Repossessed collateral

The Group obtained assets by taking possession of collateral held as security. Repossessed assets are sold as soon as practicable, with the proceeds used to reduce the outstanding indebtedness. As at 31 December 2016, repossessed assets of the Group amounted to HK\$1 million (2015: Nil).

#### 35.3.4 Concentration of credit risk

The majority of the Group's credit risk exposures are from the holding of highly liquid debt securities issued or guaranteed by OECD governments and other quasi-government entities. The maximum credit risk exposure by industry groups is analysed below:

	Group		Fund	
	2016	2015	2016	2015
Governments and government agencies <sup>1</sup>	2,092,648	2,177,277	2,092,581	2,177,031
Supra-nationals	249,592	198,275	249,592	198,275
States, provinces and public-sector entities <sup>2</sup>	197,616	183,428	226,661	212,734
Financial institutions	437,451	301,461	403,872	270,527
Others <sup>3</sup>	392,622	353,772	325,755	280,265
<b>TOTAL</b>	<b>3,369,929</b>	<b>3,214,213</b>	<b>3,298,461</b>	<b>3,138,832</b>

<sup>1</sup> These included debt securities guaranteed by governments.

<sup>2</sup> These included debt securities guaranteed by states.

<sup>3</sup> These included debt securities issued by the Bank for International Settlements.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

### 35.4 Market risk

Market risk is the risk that changes in market variables such as interest rates, exchange rates and equity prices may affect the fair values or cash flows of investments.

#### 35.4.1 *Types of market risk*

##### (a) Interest rate risk

Interest rate risk refers to the risk of loss arising from changes in market interest rates. This can be further classified into fair value interest rate risk and cash flow interest rate risk.

Fair value interest rate risk is the risk that the fair value of a financial instrument will fluctuate because of changes in market interest rates. The Group is exposed to fair value interest rate risk since a substantial portion of its investments is in fixed-rate debt securities. These securities are subject to interest rate risk as their fair values will fall when market interest rates increase. Other significant financial assets and financial liabilities with a fixed interest rate, and therefore subject to interest rate risk, include placements with banks and other financial institutions and EFBN issued.

Cash flow interest rate risk is the risk that future cash flows of a financial instrument will fluctuate because of changes in market interest rates. Because the Group has no significant floating-rate investments and liabilities, the Group's future cash flows are not materially affected by potential changes in market interest rates.

##### (b) Currency risk

Currency risk is the risk of loss arising from changes in foreign exchange rates. A large portion of the Group's foreign currency assets is held in US dollars with the remaining mainly in other major international currencies. When the exchange rates of the relevant foreign currencies against the Hong Kong dollar fluctuate, the value of these foreign currency assets expressed in Hong Kong dollar will vary accordingly.

Due to the linked exchange rate of the US dollar relative to the Hong Kong dollar, the Group's currency risk principally arises from its assets and liabilities denominated in foreign currencies other than the US dollar.

##### (c) Equity price risk

Equity price risk is the risk of loss arising from changes in prices or valuation. The Group's equity and related investments are subject to price risk since the value of these investments will decline if market prices or valuation fall.

The majority of the equity securities held by the Group are constituent stocks of major stock market indexes and companies with large market capitalisation.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 35.4.2 *Management of market risk*

The market risk of the Fund as a whole is regularly measured and monitored to prevent excessive risk exposure. The investment benchmark and tactical deviation limits of the Fund govern the asset allocation strategies. This, together with the volatility of asset markets, will affect the Fund's market risk exposure. The Fund uses derivative financial instruments to manage its exposures to market risk and facilitate the implementation of investment strategies. The market risk of the Fund is mainly measured and monitored using a Value-at-Risk (VaR) methodology.

VaR is calculated using the parametric approach based on a 95% confidence level and one-month time horizon. The result represents the maximum expected loss of the Fund over a one-month period under normal market conditions, with a 5% chance that the actual loss may exceed the calculated VaR. The Fund's absolute VaR and the relative VaR (i.e. the VaR of the Fund relative to its investment benchmark), expressed in dollar amounts, are measured by the Risk and Compliance Department and reported to management, the ISC and the EFAC on a regular basis.

The relative VaR of the Fund is also used to calculate the actual tracking error of the Fund against its investment benchmark. This is regularly monitored against the tracking error limit endorsed by the EFAC to ensure that the market risk exposure of the Fund is within its limit. The tracking error of a portfolio indicates how well the portfolio tracks its investment benchmark. The smaller the tracking error, the closer the portfolio tracks its benchmark. The tracking error limit is established to prevent the Fund from taking unduly large market risk with respect to its investment benchmark. The actual tracking error of the Fund is regularly reported to the ISC and the EFAC, and any breach of the limit is followed up in a timely manner.

VaR is a widely accepted measure of market risk within the financial services industry. It provides users with a single amount to measure market risk and takes into account multiple risks. VaR should however be assessed in the context of some of its inherent limitations. The calculation of VaR involves a number of assumptions that may or may not be valid in a real life scenario, in particular in extreme market conditions. The calculation of VaR assumes that future events can be predicted by historical data, and that changes in risk factors follow a normal distribution. The end-of-day basis does not reflect intraday exposures. In addition, the confidence level on which calculation of VaR is based needs to be taken into account as it indicates the possibility that a larger loss could be realised.

To compensate for some of the limitations of VaR, the HKMA also conducts stress tests to estimate the potential losses under extremely adverse market conditions. This serves to identify the major attributes of market risk under extreme market conditions, and helps to prevent the Fund from being exposed to excessive market risk. The results of the stress tests are also reported to the ISC and the EFAC on a regular basis.

To manage the interest rate risk arising from the fixed-rate debt securities issued by the Group to fund the purchase of portfolios of loans, a major portion of the risk is hedged using fair value hedges in the form of interest rate swaps by swapping into floating-rate funding to better match the floating-rate assets.

The Fund's investment in less liquid assets (i.e. private equity and real estate) is grouped under the Long-Term Growth Portfolio. The investment risks of the less liquid assets are managed at the aggregate level through such measures as asset class approval, allocation limit and aggregate general partner exposure. The maximum size of the Long-Term Growth Portfolio is set at one-third of the Accumulated Surplus of the Exchange Fund, with room for further expansion due to the funding of the Future Fund.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 35.4.3 Exposure to market risk

#### (a) Interest rate risk

The interest rate gap position in respect of the Group's major interest-bearing assets and liabilities, including the net repricing effect of interest rate derivatives is shown below. The assets and liabilities are stated at carrying amounts at the balance sheet date and categorised by the earlier of contractual repricing dates or maturity dates.

	Group – 2016							Non-interest-bearing financial instruments
	Repricing period of interest-bearing financial instruments							
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	Total	
Assets								
Cash and money at call	142,672	–	–	–	–	–	142,672	64,915
Placements with banks and other financial institutions	179,423	17,621	6,641	–	–	–	203,685	19
Financial assets designated at fair value	606,924	569,897	397,370	587,347	173,163	119,551	2,454,252	603,104
Available-for-sale securities	–	1,445	2,017	1,135	–	–	4,597	128,252
Held-to-maturity securities	156	300	2,285	4,064	3,127	–	9,932	–
Loan portfolio	9,470	33	8	23	–	–	9,534	–
Interest-bearing assets	938,645	589,296	408,321	592,569	176,290	119,551	2,824,672	
Liabilities								
Placements by banks and other financial institutions	–	–	–	–	–	–	–	56,136
Placements by Fiscal Reserves with interest payable at market-based rates¹	9	–	–	–	–	–	9	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates¹	3,082	–	–	–	–	–	3,082	–
Exchange Fund Bills and Notes issued	260,433	446,504	220,484	19,380	10,569	3,612	960,982	–
Bank loans	7,516	–	–	1,601	2,607	–	11,724	–
Other debt securities issued	5,769	8,858	8,464	7,660	2,098	1,384	34,233	–
Interest-bearing liabilities	276,809	455,362	228,948	28,641	15,274	4,996	1,010,030	
Net interest-bearing assets/(liabilities)	661,836	133,934	179,373	563,928	161,016	114,555	1,814,642	
Interest rate derivatives (net position, notional amounts)	15,320	(30,086)	(7,053)	5,632	10,491	4,055	(1,641)	
Interest rate sensitivity gap	677,156	103,848	172,320	569,560	171,507	118,610	1,813,001	

<sup>1</sup> Placements by Fiscal Reserves, HKSAR Government funds and statutory bodies with interest payable at a fixed rate or a composite rate determined annually are excluded because their interest rates are not determined on the basis of market interest rates (notes 23 and 24). As at 31 December 2016, such placements amounted to HK\$1,213,992 million.

# Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2015							Non-interest-bearing financial instruments
	Repricing period of interest-bearing financial instruments							
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	Total	
<b>Assets</b>								
Cash and money at call	121,904	–	–	–	–	–	121,904	66,643
Placements with banks and other financial institutions	103,262	10,331	10,268	–	–	–	123,861	19
Financial assets designated at fair value	615,829	470,674	425,812	625,251	194,364	122,485	2,454,415	560,987
Available-for-sale securities	602	1,365	810	1,522	–	–	4,299	100,176
Held-to-maturity securities	177	233	551	5,241	4,072	–	10,274	–
Loan portfolio	11,426	36	13	27	–	–	11,502	–
<b>Interest-bearing assets</b>	853,200	482,639	437,454	632,041	198,436	122,485	2,726,255	
<b>Liabilities</b>								
Placements by banks and other financial institutions	6,243	–	–	–	–	–	6,243	60,664
Placements by Fiscal Reserves with interest payable at market-based rates <sup>1</sup>	4	–	–	–	–	–	4	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates <sup>1</sup>	65	–	–	–	–	–	65	–
Exchange Fund Bills and Notes issued	185,864	407,366	189,857	28,511	11,172	5,022	827,792	–
Bank loans	8,212	–	–	–	–	3,106	11,318	–
Other debt securities issued	7,031	9,017	6,690	7,564	2,178	983	33,463	–
<b>Interest-bearing liabilities</b>	207,419	416,383	196,547	36,075	13,350	9,111	878,885	
<b>Net interest-bearing assets/(liabilities)</b>	645,781	66,256	240,907	595,966	185,086	113,374	1,847,370	
<b>Interest rate derivatives (net position, notional amounts)</b>	18,675	(30,938)	6,593	(12,507)	11,502	4,800	(1,875)	
<b>Interest rate sensitivity gap</b>	664,456	35,318	247,500	583,459	196,588	118,174	1,845,495	

<sup>1</sup> Placements by Fiscal Reserves, HKSAR Government funds and statutory bodies with interest payable at a fixed rate determined annually are excluded because their interest rates are not determined on the basis of market interest rates (notes 23 and 24). As at 31 December 2015, such placements amounted to HK\$1,114,325 million.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2016							Non-interest-bearing financial instruments
	Repricing period of interest-bearing financial instruments							
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	Total	
Assets								
Cash and money at call	142,199	–	–	–	–	–	142,199	64,755
Placements with banks and other financial institutions	174,338	4,565	809	–	–	–	179,712	–
Financial assets designated at fair value	606,924	569,897	397,370	587,347	173,163	119,551	2,454,252	588,502
Interest-bearing assets	923,461	574,462	398,179	587,347	173,163	119,551	2,776,163	
Liabilities								
Placements by banks and other financial institutions	–	–	–	–	–	–	–	56,136
Placements by Fiscal Reserves with interest payable at market-based rates <sup>1</sup>	9	–	–	–	–	–	9	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates <sup>1</sup>	3,082	–	–	–	–	–	3,082	–
Exchange Fund Bills and Notes issued	260,433	446,504	220,484	19,380	10,569	3,612	960,982	–
Interest-bearing liabilities	263,524	446,504	220,484	19,380	10,569	3,612	964,073	
Net interest-bearing assets/(liabilities)	659,937	127,958	177,695	567,967	162,594	115,939	1,812,090	
Interest rate derivatives (net position, notional amounts)	15,506	(17,755)	(15,506)	5,600	8,555	3,600	–	
Interest rate sensitivity gap	675,443	110,203	162,189	573,567	171,149	119,539	1,812,090	

<sup>1</sup> Placements by Fiscal Reserves, HKSAR Government funds and statutory bodies with interest payable at a fixed rate or a composite rate determined annually are excluded because their interest rates are not determined on the basis of market interest rates (notes 23 and 24). As at 31 December 2016, such placements amounted to HK\$1,213,992 million.



## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2015							Non-interest-bearing financial instruments
	Repricing period of interest-bearing financial instruments						Total	
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years		
<b>Assets</b>								
Cash and money at call	121,368	–	–	–	–	–	121,368	66,467
Placements with banks and other financial institutions	98,837	1,891	1,953	–	–	–	102,681	–
Financial assets designated at fair value	615,829	470,605	425,748	625,251	194,364	122,485	2,454,282	548,338
<b>Interest-bearing assets</b>	836,034	472,496	427,701	625,251	194,364	122,485	2,678,331	
<b>Liabilities</b>								
Placements by banks and other financial institutions	6,243	–	–	–	–	–	6,243	60,664
Placements by Fiscal Reserves with interest payable at market-based rates <sup>1</sup>	4	–	–	–	–	–	4	–
Placements by HKSAR Government funds and statutory bodies with interest payable at market-based rates <sup>1</sup>	65	–	–	–	–	–	65	–
Exchange Fund Bills and Notes issued	185,864	407,366	189,857	28,511	11,172	5,022	827,792	–
<b>Interest-bearing liabilities</b>	192,176	407,366	189,857	28,511	11,172	5,022	834,104	
<b>Net interest-bearing assets/(liabilities)</b>	643,858	65,130	237,844	596,740	183,192	117,463	1,844,227	
<b>Interest rate derivatives (net position, notional amounts)</b>	15,500	(18,253)	–	(11,500)	9,453	4,800	–	
<b>Interest rate sensitivity gap</b>	659,358	46,877	237,844	585,240	192,645	122,263	1,844,227	

<sup>1</sup> Placements by Fiscal Reserves, HKSAR Government funds and statutory bodies with interest payable at a fixed rate determined annually are excluded because their interest rates are not determined on the basis of market interest rates (notes 23 and 24). As at 31 December 2015, such placements amounted to HK\$1,114,325 million.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### (b) Currency risk

The currency exposure of the Group is summarised below:

	Group			
	2016		2015	
	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)
Hong Kong dollar	320.1	2,618.1	258.9	2,503.7
US dollar	3,115.1	490.8	2,813.9	403.2
	3,435.2	3,108.9	3,072.8	2,906.9
Others <sup>1</sup>	310.3	18.5	458.5	25.1
<b>TOTAL</b>	<b>3,745.5</b>	<b>3,127.4</b>	<b>3,531.3</b>	<b>2,932.0</b>

	Fund			
	2016		2015	
	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)	Assets (in HK\$ billion)	Liabilities (in HK\$ billion)
Hong Kong dollar	286.9	2,581.2	222.9	2,475.2
US dollar	3,050.2	490.4	2,767.6	401.8
	3,337.1	3,071.6	2,990.5	2,877.0
Others <sup>1</sup>	281.6	0.6	432.4	1.0
<b>TOTAL</b>	<b>3,618.7</b>	<b>3,072.2</b>	<b>3,422.9</b>	<b>2,878.0</b>

<sup>1</sup> Other currencies included mainly euro, renminbi, pound sterling and Japanese yen.

### (c) Equity price risk

As at 31 December 2016 and 2015, the majority of equity investments were reported as “financial assets designated at fair value” as shown in note 9.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 35.4.4 *Sensitivity analysis*

The Value-at-Risk positions of the Fund at 31 December and during the year, based on a 95% confidence level and one-month time horizon, were as follows:

	Fund	
	2016	2015
<b>Value-at-Risk</b>		
At 31 December <sup>1</sup>	<b>25,727</b>	30,222
During the year		
Average	<b>33,990</b>	33,136
Maximum	<b>44,479</b>	46,167
Minimum	<b>25,727</b>	23,906

<sup>1</sup> The amount represented 0.8% of the Fund's investments which were subject to VaR measurement as at 31 December 2016 (2015: 0.9%).

### 35.5 *Liquidity risk*

Liquidity risk refers to the risk that the Group may not have sufficient funds available to meet its liabilities as they fall due. In addition, the Group may not be able to liquidate its financial assets at a price close to fair value within a short period of time.

#### 35.5.1 *Management of liquidity risk*

To ensure sufficient liquidity to meet liabilities and the ability to raise funds to meet exceptional needs, the Group invests primarily in liquid financial markets and instruments that are readily saleable to meet liquidity needs. There are internal investment restrictions to prevent undue concentrations in individual debt securities issues, debt securities issuers, and groups of closely related debt securities issuers. Such restrictions are derived based on various factors such as the nature or maturity of the securities. There are also limitations on the maximum proportion of assets that can be placed in fixed term deposits and less liquid assets, and requirements regarding the ability to convert foreign currency assets into cash. All these restrictions and limits are designed to promote the liquidity of assets and consequently minimise the liquidity risk. The liquidity risk for the Exchange Fund investment is monitored on an aggregate basis through appropriate portfolio mix with sufficient liquid assets to offset investments of less liquid assets. Compliance with these limits is monitored by the Risk and Compliance Department and any breaches are reported to the ISC and are promptly followed up.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 35.5.2 Exposure to liquidity risk

The remaining contractual maturities at the balance sheet date of major financial liabilities, commitments and derivative financial liabilities, which are based on contractual undiscounted cash flows and the earliest date on which the Group can be required to pay, are shown below:

	Group – 2016						Total
	Remaining maturity						
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	
Non-derivative cash outflows							
Certificates of Indebtedness	405,345	–	–	–	–	–	405,345
Government-issued currency notes and coins in circulation	11,928	–	–	–	–	–	11,928
Balance of the banking system	259,593	–	–	–	–	–	259,593
Placements by banks and other financial institutions	–	–	56,136	–	–	–	56,136
Placements by Fiscal Reserves	690,068	–	–	–	224,530	–	914,598
Placements by HKSAR Government funds and statutory bodies	162,573	–	19,600	101,140	19,172	–	302,485
Exchange Fund Bills and Notes issued	260,481	447,074	221,590	20,806	11,101	3,730	964,782
Bank loans	60	19	243	10,246	3,063	–	13,631
Other debt securities issued	2,582	7,867	9,953	11,669	2,316	2,084	36,471
Other liabilities	151,728	4,449	71	104	10,071	–	166,423
Loan commitments, guarantees and other credit related commitments	367,389	–	–	–	–	–	367,389
TOTAL	2,311,747	459,409	307,593	143,965	270,253	5,814	3,498,781
Derivative cash (inflows)/outflows							
Derivative financial instruments settled:							
– on net basis	226	(17)	(67)	172	202	50	566
– on gross basis							
Total outflows	37,341	16,650	22	711	1,154	–	55,878
Total inflows	(37,040)	(15,131)	(34)	(713)	(1,022)	–	(53,940)
TOTAL	527	1,502	(79)	170	334	50	2,504

# Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2015						Total
	Remaining maturity						
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	
<b>Non-derivative cash outflows</b>							
Certificates of Indebtedness	357,863	–	–	–	–	–	357,863
Government-issued currency notes and coins in circulation	11,335	–	–	–	–	–	11,335
Balance of the banking system	391,343	–	–	–	–	–	391,343
Placements by banks and other financial institutions	6,243	–	60,664	–	–	–	66,907
Placements by Fiscal Reserves	833,548	–	–	–	–	–	833,548
Placements by HKSAR Government funds and statutory bodies	157,556	–	6,050	82,240	35,000	–	280,846
Exchange Fund Bills and Notes issued	185,863	407,541	190,405	29,893	11,719	5,019	830,440
Bank loans	77	–	445	9,477	612	3,163	13,774
Other debt securities issued	4,151	4,266	9,279	13,610	2,463	1,615	35,384
Other liabilities	112,375	404	9	252	135	–	113,175
Loan commitments, guarantees and other credit related commitments	356,060	–	–	7	–	–	356,067
<b>TOTAL</b>	2,416,414	412,211	266,852	135,479	49,929	9,797	3,290,682
<b>Derivative cash (inflows)/outflows</b>							
Derivative financial instruments settled:							
– on net basis	249	18	(30)	4	49	21	311
– on gross basis							
Total outflows	24,623	38,589	13,735	5,097	758	–	82,802
Total inflows	(24,230)	(38,109)	(13,701)	(3,741)	(665)	–	(80,446)
<b>TOTAL</b>	642	498	4	1,360	142	21	2,667

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2016						Total
	Remaining maturity						
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	
<b>Non-derivative cash outflows</b>							
Certificates of Indebtedness	405,345	–	–	–	–	–	405,345
Government-issued currency notes and coins in circulation	11,928	–	–	–	–	–	11,928
Balance of the banking system	259,593	–	–	–	–	–	259,593
Placements by banks and other financial institutions	–	–	56,136	–	–	–	56,136
Placements by Fiscal Reserves	690,068	–	–	–	224,530	–	914,598
Placements by HKSAR Government funds and statutory bodies	162,573	–	19,600	101,140	19,172	–	302,485
Exchange Fund Bills and Notes issued	260,481	447,074	221,590	20,806	11,101	3,730	964,782
Other liabilities	145,423	4,410	66	–	10,071	–	159,970
Loan commitments and other credit related commitments	262,722	–	–	–	–	–	262,722
<b>TOTAL</b>	<b>2,198,133</b>	<b>451,484</b>	<b>297,392</b>	<b>121,946</b>	<b>264,874</b>	<b>3,730</b>	<b>3,337,559</b>
<b>Derivative cash (inflows)/outflows</b>							
Derivative financial instruments settled:							
– on net basis	223	(25)	(28)	142	174	23	509
– on gross basis							
Total outflows	36,769	11,605	–	–	–	–	48,374
Total inflows	(36,484)	(11,462)	–	–	–	–	(47,946)
<b>TOTAL</b>	<b>508</b>	<b>118</b>	<b>(28)</b>	<b>142</b>	<b>174</b>	<b>23</b>	<b>937</b>

# Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2015						Total
	Remaining maturity						
	1 month or less	3 months or less but over 1 month	1 year or less but over 3 months	5 years or less but over 1 year	10 years or less but over 5 years	Over 10 years	
<b>Non-derivative cash outflows</b>							
Certificates of Indebtedness	357,863	–	–	–	–	–	357,863
Government-issued currency notes and coins in circulation	11,335	–	–	–	–	–	11,335
Balance of the banking system	391,343	–	–	–	–	–	391,343
Placements by banks and other financial institutions	6,243	–	60,664	–	–	–	66,907
Placements by Fiscal Reserves	833,548	–	–	–	–	–	833,548
Placements by HKSAR Government funds and statutory bodies	157,556	–	6,050	82,240	35,000	–	280,846
Exchange Fund Bills and Notes issued	185,863	407,541	190,405	29,893	11,719	5,019	830,440
Other liabilities	106,669	360	8	–	–	–	107,037
Loan commitments and other credit related commitments	262,968	–	–	7	–	–	262,975
<b>TOTAL</b>	2,313,388	407,901	257,127	112,140	46,719	5,019	3,142,294
<b>Derivative cash (inflows)/outflows</b>							
Derivative financial instruments settled:							
– on net basis	248	18	(20)	2	49	21	318
– on gross basis							
Total outflows	21,687	34,461	11,841	–	–	–	67,989
Total inflows	(21,369)	(34,150)	(11,764)	–	–	–	(67,283)
<b>TOTAL</b>	566	329	57	2	49	21	1,024

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 35.6 Insurance risk

The Group provides (i) mortgage insurance cover to authorized institutions in respect of mortgage loans originated by such authorized institutions and secured on residential properties in Hong Kong; (ii) insurance cover to authorized institutions in respect of reverse mortgage loans originated by such authorized institutions to elderly people; (iii) insurance cover to authorized institutions in respect of lump-sum loans to owners of properties of subsidised housing schemes for land premium settlement; and (iv) financial guarantee cover to authorized institutions in respect of loans originated by such authorized institutions to small and medium sized enterprises (SMEs) and non-listed enterprises in Hong Kong. The Group faces insurance risk of the possibility of the insured event occurring and the uncertainty of the amount of the resulting claim.

Under the Mortgage Insurance Programme, the Group, through the HKMC, offers mortgage insurance that covers authorized institutions for first credit losses of up to 30% of the value of properties financed under mortgage loans with loan-to-value ratio 90% or below at origination. The Group reinsures the exposure with approved reinsurers. As at 31 December 2016, the total risk-in-force was HK\$16.8 billion (2015: HK\$13.4 billion), of which HK\$14.1 billion (2015: HK\$11.3 billion) was retained by the Group after reinsurance. The Group also provides financial guarantee cover to authorized institutions up to 50% to 70% of the banking facilities granted to SMEs and non-listed enterprises in Hong Kong, and insurance cover to authorized institutions in respect of reverse mortgage loans originated by such authorized institutions and secured on residential properties, and in respect of lump-sum loans advanced by such authorized institutions to owners of properties of subsidised housing schemes primarily for land premium settlement and secured on these properties. As at 31 December 2016, the total risk-in-force was HK\$4.3 billion (2015: HK\$3.0 billion).

For a portfolio of insurance contracts where the theory of probability is applied to pricing and provisioning, the principal risk that the Group faces under its insurance contracts is that the actual claims exceed the carrying amount of the insurance liabilities. This could occur because the frequency or severity of claims is greater than estimated. Insurance events are random and the actual number and amount of claims and benefits will vary from year to year from the estimate established using statistical techniques.

Experience shows that the larger the portfolio of similar insurance contracts, the smaller the relative variability about the expected outcome will be. In addition, a more diversified portfolio is less likely to be affected across the board by a change in any subset of the portfolio. The Group has developed a business strategy to diversify the type of insurance risks accepted and within each of the key categories to achieve a sufficiently large population of risks to reduce the variability of the expected outcome.

The frequency and severity of claims can be affected by several factors. The most significant factors are a downturn in the economy, a slump in local property market and a low mortality rate of reverse mortgage borrowers. Economic downturn, which may cause a rise in defaulted payment, affects the frequency of claims and collateral value. A drop in property prices, where the collateral values fall below the outstanding balance of the mortgage loans, will increase the severity of claims. Low mortality rate of reverse mortgage borrowers means longer payout period and larger loan balance will be over time. This will affect the frequency and severity of claims as there is a risk of the property value being insufficient to cover the outstanding loan balance in the future.



## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

---

The Group manages these risks by adopting a set of prudent insurance underwriting eligibility criteria. To ensure sufficient provision is set aside for meeting future claim payments, the Group calculates technical reserves on prudent liability valuation assumptions and the methods prescribed in the regulatory guidelines. The Group also takes out quota-share reinsurance from its approved mortgage reinsurers in an effort to limit its risk exposure under the mortgage insurance business. The reinsurers are selected according to prudent criteria and their credit ratings are reviewed regularly. For financial guarantee cover provided to authorized institutions, the Group relies on the lenders' prudent credit assessment on the borrowers to mitigate default risk and any loss in the loan facility will be shared proportionately between the Group and the lender on a pari passu basis to minimise moral hazards. The mortality assumptions of reverse mortgages are also reviewed on a regular basis, to assess the risk of larger deviation between the actual and expected operating results.

### 35.7 Operational risk

Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. Operational risk is inherent in all aspects of the Group's operations covering all business segments.

The Group's objective is to cost-effectively manage operational risk to prevent financial losses or damage to the Group's reputation.

The primary responsibility for the development and implementation of controls to address operational risk rests with line management, with oversight by an internal high-level Risk Committee. The Committee is chaired by the Chief Executive of the HKMA with the two Deputy Chief Executives and a Senior Executive Director as members. The Risk Committee provides direction and guidance for line management in managing operational risk.

Operational risk management is supported by a formal risk assessment process. This is conducted annually and supplemented with quarterly updates. It requires each division to assess and rank the potential impact and likelihood of occurrence of financial and operational risks. It also requires divisions to review the procedures and controls in place for addressing the identified risks. This risk and control self-assessment is reviewed by Internal Audit to ensure consistency and reasonableness before submission to the Risk Committee, which has the responsibility for ensuring that the identified risks are properly addressed. Results of this risk assessment also form the basis for the development of an annual Internal Audit work plan. Internal Audit will audit the risk areas at various frequencies depending on the levels of risks and the results of past audits. It reports its findings regularly to the EFAC Audit Sub-Committee and the Chief Executive of the HKMA and follows up on outstanding issues to ensure that they are resolved in a proper manner.

Operational risk is also inherent in the investment activities and processes of the Reserves Management Department. To enhance its operational risk oversight, the Risk and Compliance Department formalised its operational risk management framework for the Reserves Management Department. The key elements of the framework include identification and monitoring of key risk indicators; reporting to the senior management of the HKMA on the operational risk profile of the Reserves Management Department; and handling of operational risk incidents and issue monthly operational risk reports to relevant senior executives.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 36 FAIR VALUE MEASUREMENT OF FINANCIAL INSTRUMENTS

#### 36.1 Fair value of financial instruments measured at fair value on a recurring basis

##### 36.1.1 Fair value hierarchy

The carrying values of financial instruments measured at fair value at the balance sheet date across the three levels of the fair value hierarchy are shown below:

	Group – 2016			
	Level 1	Level 2	Level 3	Total
<b>Assets</b>				
Financial assets designated at fair value				
Treasury bills and commercial paper	380,287	604,199	–	984,486
Certificates of deposit	–	80,190	–	80,190
Other debt securities	1,336,056	65,421	12,755	1,414,232
Equity securities	453,872	85,963	38,613	578,448
	2,170,215	835,773	51,368	3,057,356
Available-for-sale securities				
Debt securities	5,336	650	–	5,986
Equity securities	992	–	–	992
Investment funds	–	860	124,518	125,378
	6,328	1,510	124,518	132,356
Derivative financial instruments	226	9,037	–	9,263
	2,176,769	846,320	175,886	3,198,975
<b>Liabilities</b>				
Exchange Fund Bills and Notes issued	–	960,982	–	960,982
Derivative financial instruments	223	2,635	–	2,858
Other debt securities issued, designated at fair value	–	137	–	137
	223	963,754	–	963,977

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Group – 2015			Total
	Level 1	Level 2	Level 3	
<b>Assets</b>				
Financial assets designated at fair value				
Treasury bills and commercial paper	474,488	483,517	–	958,005
Certificates of deposit	–	56,357	–	56,357
Other debt securities	1,390,804	56,846	11,281	1,458,931
Equity securities	456,636	49,405	36,068	542,109
	2,321,928	646,125	47,349	3,015,402
Available-for-sale securities				
Debt securities	3,690	2,035	–	5,725
Equity securities	913	–	–	913
Investment funds	–	–	97,344	97,344
	4,603	2,035	97,344	103,982
Derivative financial instruments	534	5,297	–	5,831
	2,327,065	653,457	144,693	3,125,215
<b>Liabilities</b>				
Exchange Fund Bills and Notes issued	–	827,792	–	827,792
Derivative financial instruments	248	3,008	–	3,256
Other debt securities issued, designated at fair value	–	343	–	343
	248	831,143	–	831,391

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

	Fund – 2016			
	Level 1	Level 2	Level 3	Total
<b>Assets</b>				
Financial assets designated at fair value				
Treasury bills and commercial paper	380,287	604,199	–	984,486
Certificates of deposit	–	80,190	–	80,190
Other debt securities	1,336,056	65,421	–	1,401,477
Equity securities	453,872	85,963	36,766	576,601
	2,170,215	835,773	36,766	3,042,754
Derivative financial instruments	226	8,792	–	9,018
	2,170,441	844,565	36,766	3,051,772
<b>Liabilities</b>				
Exchange Fund Bills and Notes issued	–	960,982	–	960,982
Derivative financial instruments	223	706	–	929
	223	961,688	–	961,911

  

	Fund – 2015			
	Level 1	Level 2	Level 3	Total
<b>Assets</b>				
Financial assets designated at fair value				
Treasury bills and commercial paper	474,488	483,517	–	958,005
Certificates of deposit	–	56,357	–	56,357
Other debt securities	1,390,804	56,833	–	1,447,637
Equity securities	456,636	49,405	34,580	540,621
	2,321,928	646,112	34,580	3,002,620
Derivative financial instruments	534	4,823	–	5,357
	2,322,462	650,935	34,580	3,007,977
<b>Liabilities</b>				
Exchange Fund Bills and Notes issued	–	827,792	–	827,792
Derivative financial instruments	248	854	–	1,102
	248	828,646	–	828,894

The Group's policy is to recognise transfers between levels of fair value hierarchy as at the end of the reporting period in which they occur. During the year, there were no transfers of financial instruments between Level 1 and Level 2 of the fair value hierarchy.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

An analysis of the movement between opening and closing balances of Level 3 assets, measured at fair value using a valuation technique with significant unobservable inputs, is shown below:

	Group					
	Designated at fair value		Available-for-sale		Derivatives	
	2016	2015	2016	2015	2016	2015
At 1 January	47,349	37,694	97,344	81,929	–	127
Net gains/(losses) recognised in the income and expenditure account	2,653	(1,899)	–	–	–	(127)
Net gains/(losses) recognised in other comprehensive income	–	–	4,236	(3,811)	–	–
Purchases	13,807	20,548	33,366	28,708	–	–
Sales	(12,707)	(9,445)	(10,428)	(9,482)	–	–
Transfers into Level 3	2,070	1,062	–	–	–	–
Transfers out of Level 3	(1,804)	(611)	–	–	–	–
At 31 December	51,368	47,349	124,518	97,344	–	–
Net gains/(losses) recognised in the income and expenditure account relating to those assets held at the balance sheet date	2,779	(1,724)	–	–	–	–

  

	Fund			
	Designated at fair value		Available-for-sale	
	2016	2015	2016	2015
At 1 January	34,580	25,908	–	–
Net gains/(losses) recognised in the income and expenditure account	1,622	(481)	–	–
Purchases	9,756	16,397	–	–
Sales	(9,458)	(7,695)	–	–
Transfers into Level 3	2,070	1,062	–	–
Transfers out of Level 3	(1,804)	(611)	–	–
At 31 December	36,766	34,580	–	–
Net gains/(losses) recognised in the income and expenditure account relating to those assets held at the balance sheet date	1,737	(306)	–	–

During the year, certain financial instruments were transferred between Level 2 and Level 3 of the fair value hierarchy reflecting changes in transparency of observable market data for these instruments.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 36.1.2 Valuation techniques and key inputs

The fair value of financial instruments classified under Level 1 is based on quoted market prices in active markets for identical assets or liabilities at the balance sheet date.

In the absence of quoted market prices in active markets, the fair value of financial instruments classified under Level 2 is estimated using present value or other valuation techniques, using inputs based on market conditions existing at the balance sheet date. Specific valuation techniques and key inputs used to value these financial instruments include:

- i) quoted market price or broker quotes for similar instruments;
- ii) derivative financial instruments are priced using models with observable market inputs including interest rate swaps and foreign exchange contracts; and
- iii) commercial paper and debt securities are priced using discounted cash flow techniques with observable yield curves.

For investments in unlisted investment funds, certain unlisted equity securities and certain unlisted debt securities which are classified under Level 3, their fair values are estimated by making reference to valuation reports provided by investment managers. It is not practicable to quote a range of key unobservable inputs.

For certain unlisted equity securities valued by the Group, which are classified under Level 3, their fair values are derived from Comparable Company Valuation Model, which derives the valuation of an investment through the product of its earnings, earning multiples of comparable public companies and a discount factor for a lack of liquidity. Significant unobservable inputs used under this valuation method include earning multiples of similar companies and liquidity discount:

Significant unobservable inputs	Quantitative amount	
	2016	2015
Earning multiples of similar companies	5.6–13.2	5.1–13.8
Liquidity discount	20%	20%

If the prices of these investments had increased/decreased by 10%, it would have resulted in an increase/decrease in the Group's surplus for the year of HK\$5,137 million (2015: HK\$4,735 million) and in other comprehensive income of HK\$12,452 million (2015: HK\$9,734 million).

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 36.2 Fair value of debt securities not measured at fair value on a recurring basis

The fair values of held-to-maturity securities and other debt securities issued that were not designated at fair value are shown below:

	Note	Group – 2016			Total
		Carrying value	Fair value		
			Level 1	Level 2	
<b>Financial assets</b>					
Held-to-maturity securities	12	9,932	9,829	300	10,129
<b>Financial liabilities</b>					
Other debt securities issued	27	34,096	–	34,169	34,169

  

	Note	Group – 2015			Total
		Carrying value	Fair value		
			Level 1	Level 2	
<b>Financial assets</b>					
Held-to-maturity securities	12	10,274	10,206	300	10,506
<b>Financial liabilities</b>					
Other debt securities issued	27	33,120	–	33,335	33,335

In the absence of quoted market prices in active markets, the fair values of debt securities classified under Level 2 are estimated using present value or other valuation techniques, using inputs based on market conditions existing at the balance sheet date. Specific valuation techniques and key inputs used to value these debt securities include quoted market prices for securities with similar credit, maturity and yield characteristics for held-to-maturity securities, discounted cash flow model based on a current yield curve appropriate for the remaining term to maturity for other debt securities issued.

All other financial instruments of the Group and the Fund are stated at fair value or carried at amounts not materially different from their fair values as at 31 December 2016 and 2015.

## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

### 37 POSSIBLE IMPACT OF AMENDMENTS, NEW STANDARDS AND INTERPRETATIONS ISSUED BUT NOT YET EFFECTIVE FOR THE YEAR ENDED 31 DECEMBER 2016

Up to the date of issue of these financial statements, the HKICPA has issued a number of amendments and new standards which are not yet effective for the year ended 31 December 2016 and which have not been adopted in these financial statements. The Group is in the process of making an assessment of what the impact of these amendments and new standards is expected to be in the period of initial adoption. So far, the Group expects that the adoption of the following, which are relevant to the Group, is unlikely to have a significant effect on its financial statements:

	Effective for accounting periods beginning on or after
HKFRS 9 “Financial Instruments”	1 January 2018
HKFRS 16 “Leases”	1 January 2019

#### HKFRS 9 “Financial Instruments”

HKFRS 9 addresses the classification, measurement and recognition of financial assets and financial liabilities, and introduces new rules for hedge accounting and a new impairment model for financial assets. It replaces HKAS 39 “Financial Instruments: Recognition and Measurement”. HKFRS 9 retains but simplifies the mixed measurement model and establishes three primary categories for measuring financial assets: (1) amortised cost, (2) fair value through other comprehensive income (FVOCI) and (3) fair value through profit or loss (FVTPL). The basis of classification depends on the entity’s business model and contractual cash flow characteristics of the financial assets. Investment in equity instruments are required to be measured at FVTPL with the irrevocable option at inception to present changes in fair value in other comprehensive income without the possibility to recycle these results to the income and expenditure account. For financial liabilities there are no changes to classification and measurement except that, in respect of liabilities designated at FVTPL, any changes in fair value due to a change in own credit risk should be recognised in other comprehensive income. The Group expects that these new requirements will not have any significant impact on the classification and measurement of its financial assets and financial liabilities, except that the financial assets currently designated as available-for-sale securities (note 10) will be classified as at either FVTPL or FVOCI under HKFRS 9, based on the Group’s business model and their contractual cash flow characteristics.

HKFRS 9 introduces a new expected credit loss model to replace the incurred loss impairment model used in HKAS 39. It applies to financial assets classified at amortised cost, debt instruments measured at FVOCI, lease receivables, loan commitments and certain financial guarantee contracts. The Group is currently refining its impairment loss estimation methodology to quantify the impact on its financial statements.

HKFRS 9 relaxes the requirements for hedge effectiveness by replacing the bright line hedge effectiveness tests and adopting a more principles-based approach. It requires an economic relationship between the hedged item and the hedging instrument and for the hedged ratio to be the same as the one management actually use for risk management purposes. Contemporaneous documentation is still required but is different to that currently prepared under HKAS 39. The Group expects that the current hedge relationships would qualify as continuing hedges under HKFRS 9.

HKFRS 9 also introduces expanded disclosure requirements and changes in presentation. These are expected to change the nature and extent of the Group’s disclosures about its financial instruments particularly in the year of the adoption of the new standard.



## Exchange Fund – Notes to the Financial Statements (continued)

(Amounts expressed in millions of Hong Kong dollars, unless otherwise stated.)

The new standard is effective for financial years beginning on or after 1 January 2018 with an early adoption permitted. The Group plans to adopt the standard when it becomes effective in 2018 without restating comparative information and is gathering data to quantify the potential impact arising from adoption.

### HKFRS 16 “Leases”

HKFRS 16 sets out the principles for the recognition, measurement, presentation and disclosure of leases. It will supersede HKAS 17 related to leases. It introduces a single lessee accounting model and requires a lessee to recognise assets and liabilities for all leases with a term of more than 12 months, unless the underlying asset is of low value. Under HKFRS 16, a lessee is required to recognise a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments. Accordingly, a lessee should recognise depreciation of the right-of-use asset and interest on the lease liability. The right-of-use asset and the lease liability are initially measured on a present value basis. The measurement includes non-cancellable lease payments and payments to be made in optional periods if the lessee is reasonably certain to exercise an option to extend the lease. In respect of the lessor accounting, HKFRS 16 substantially carries forward the lessor accounting requirements in HKAS 17.

HKFRS 16 will primarily affect the Group’s accounting as a lessee of leases for premises which are currently classified as operating leases. The application of the new accounting model is expected to lead to an increase in both assets and liabilities and to impact on the timing of the expense recognition in the income and expenditure account over the period of the leases. As disclosed in note 32(i), the Group’s future minimum lease payments under non-cancellable operating leases of premises amounted to HK\$282 million as at 31 December 2016. The Group has yet to assess the impact of the standard on its financial statements. The new standard is mandatory for financial years beginning on or after 1 January 2019. At this stage, the Group does not intend to adopt the standard before its effective date.

## 38 APPROVAL OF FINANCIAL STATEMENTS

The financial statements were approved by the Financial Secretary on the advice of the Exchange Fund Advisory Committee on 7 April 2017.